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HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

EIGHTH ANNUAL REPORT OF THE SECRETARY OF TRANSPORTATION

TO THE

CONGRESS OF THE UNITED STATES

IN COMPLIANCE WITH

SECTION 144(i) OF TITLE 23, UNITED STATES CODE

NOVEMBER 1987

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SENATE RESOLUTION 290 SUBMITTED BY MR. BURDICK OF NORTH DAKOTA

In the Senate of the United States, November 18, 1987

Resolved, That the annual report of the Secretary of Transportation to the Congress of the United States in compliance with section 144(i) of title 23, United States Code entitled "Highway Bridge Replacement and Rehabilitation Program, Eighth Annual Report to Congress" be printed as a Senate document.

SEC. 2. There shall be printed three hundred additional copies for the use of the Committee on Environment and Public Works.

Attest:

WALTER J. STEWART,
Secretary.

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PREFACE

In 1982, Congress acknowledged the seriousness of our Nation's bridge needs by continuing the Highway Bridge Replacement and Rehabilitation Program (HBRRP). The Surface Transportation Assistance Act (STAA) of 1982 increased funding for the HBRRP through Fiscal Year (FY) 1986 to record levels and changed the governing legislation for the program in a number of other ways as well. The 1987 Surface Transportation and Uniform Relocation Assistance Act (STURAA) provides authorizations for the HBRRP through 1991.

This report on the HBRRP is in two parts. The first part describes the HBRRP and summarizes bridge program activities. The second part summarizes actions taken since the last report to implement recommendations resulting from a 1984 top level management review of the entire Federal-aid bridge program.

OBJECTIVE OF REPORT

Section 144(i) of Title 23, U.S. Code, requires an annual report to Congress on the HBRRP, the status of the National Bridge Inventory (NBI), and recommendations for program improvement.

The objective of the Eighth Annual Report is to describe in detail the progress made in administering the HBRRP through December 31, 1986. The report will also discuss the status of bridge inventories for both Federal-aid and off-system highways.

PART I

SPECIAL BRIDGE REPLACEMENT PROGRAM

Congress began the Special Bridge Replacement Program (SBRP) in 1970 and made available a total of $816.5 million through FY 1978. By law, these funds remain available until used to reimburse a State for eligible project costs. In all, 1,581 bridges have been approved for design and/or construction. Although all SBRP funds have been obligated for several years, small amounts continue to become available for reobligation in individual States as they complete ongoing projects and determine final costs. The SBRP will expire when all projects using these funds are closed out. As of December 31, 1986, the States had an SBRP unobligated balance of $0.1 million.

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

The 1978 STAA replaced the SBRP with the HBRRP and authorized a total of $4.2 billion for FY's 1979 through 1982 to improve bridges on public highways throughout the Nation. The 1982 STAA continued the HBRRP and authorized a total of $7.05 billion for FY's 1983 through 1986. This total was revised downward by $150 million in FY 1986 as a result of the Gramm-Rudman-Hollings Act. The Washington Headquarters of the Federal Highway Administration (FHWA) administers the HBRRP through organizational channels.

Appendix A of this report contains current regulations for the HBRRP funding program. Appendix B contains the National Bridge Inspection Standards (NBIS), which implement the requirements for bridge inspection and inventory. The FHWA continues to evaluate the HBRRP regulations and the NBIS for changes to simplify procedures and improve the cost effectiveness of the bridge program.

The HBRRP is divided into two categories: (1) apportioned funds that are distributed according to relative State needs, and (2) discretionary funds that are set aside for allocation by the Secretary of Transportation to replace or rehabilitate deficient, critically needed, high-cost bridges on the Federal-aid system. The Federal share is 80 percent of eligible project costs for both categories.

Apportioned Bridge Funds

Under Section 121 of the 1982 STAA, each State's apportionment factor is revised annually in view of changing needs and actual construction costs. To establish the apportionment factor, the FHWA applies construction costs to the four categories of eligible deficient bridge projects in each State. These categories are: (1) replacement of Federal-aid system bridges, (2) replacement of off-system bridges, (3) rehabilitation of Federal-aid system bridges, and (4) rehabilitation of off-system bridges. The ratio of each State's need to the national need is the apportionment factor. By law, each State must receive at least 0.25 percent but not more than 10 percent of the total funds available.

Discretionary Bridge Funds

Discretionary bridge funds finance Federal-aid system bridge replacement or rehabilitation projects that have an estimated cost exceeding $10 million. In smaller States, bridge projects are eligible if their cost is less than $10 million but more than twice the amount apportioned to the State for the year funds are requested. The FHWA uses proposed funding schedules submitted by the States for candidate bridges to establish master funding plans. The plans are revised annually, or more often if necessary, using the latest data from the States.

The 1982 STAA directed the Secretary of Transportation to develop a regulation on the selection of discretionary bridge projects. The regulation, which went into effect December 17, 1983 (see Appendix C), established a formula for calculating a rating factor from criteria included in the legislation. The process gives funding priority to discretionary bridge projects already begun under the program. In addition, candidate bridges not previously selected and having a computed rating factor of 100 or less are eligible for consideration.

The discretionary planning list as of December 31, 1986, includes 196 bridges that the States have submitted as candidates for replacement or rehabilitation. The 196 projects would cost an estimated $6.58 billion and would require $5.26 billion in discretionary bridge funds (80 percent of eligible costs) if fully funded from the discretionary bridge category. All candidates submitted by the States are included in the planning list even though some unfunded projects are not eligible under the 1983 regulation.

As of December 31, 1986, the Department of Transportation (DOT) had selected 86 of the 196 bridge projects for funding (see Table 3). The total cost of these 86 projects is $3.17 billion, of which $1.59 billion had been allocated as of December 31, 1986 (see Table 10). The FHWA estimates that approximately $600 million more in Federal funds will be required to complete these ongoing projects (some discretionary bridge projects are not funded at 80 percent of total project cost because they were either begun with other funds or the States presented acceptable proposals to combine discretionary bridge funds with apportioned bridge program and State funds).

The total estimated project cost for the remaining 110 projects is $3.4 billion, and they would require approximately $2.7 billion in Federal funds if fully funded from the discretionary bridge category.

Individual State requests vary yearly as candidate projects advance in priority or are delayed. Additional projects will be submitted for the program as existing bridges age and deteriorate to the point that rehabilitation or replacement is required.

Program Status

The table on the Status of the Nation's Bridges shows changes since the Seventh Annual Report. The data in the table is based on the NBI.

Each year, the FHWA asks the States to update the NBI as the required inventory and inspection program continues for all public highway bridges. Many States update their data more often. The total number of highway bridges, the number on the different systems, and the number of deficient bridges will continue to fluctuate with each annual report because of the ongoing inspection program, highway system changes, construction of new bridges, HBRRP projects, and demolition or closing of others (see Tables 4A, 4B, 5A, and 5B).

STATUS OF THE NATION'S BRIDGES

		Seventh Annual HBRRP Report as of December 31, 1985			From NBI December 31, 1986		
		Federal-aid	Off-system	Total	Federal-aid	Off-system	Total
Number of bridges inventoried and classified		269,781	304,948	574,729	271,310	304,357	575,667
Number of structurally deficient bridges* (includes closed bridges)		35,433**	100,303**	135,736**	36,321**	95,241**	131,562**
Number of functionally obsolete bridges*		40,499**	67,682**	108,181**	40,542**	71,542**	112,084**
Number of bridges that are load posted***		20,147	92,375	112,522	19,546	92,359	111,905
Additional bridges that should be load posted***		8,990	24,861	33,851	5,049	30,537	36,386
Total bridges that are or should be load posted***		29,137	117,236	146,373	25,395	122,896	148,291
Number of bridges closed to all traffic (these bridges may be closed temporarily for repairs or closed permanently)		620	4,271	4,899	595	3,530	4,125
Total number of bridges funded under the bridge program	SBRP	1,579		1,579	1,581		1,581
	HBRRP	12,155	9,243	21,398	13,763	10,790	24,553
	Total****	13,734****	9,243****	22,977****	15,344****	10,790****	26,134****
Number of replaced or rehabilitated bridges now open to traffic (SBRP & HBRRP)		6,675****	4,591****	11,266****	8,430****	6,123****	14,553****
Bridges under construction and/or design (SBRP & HBRRP)		7,059****	4,652****	11,711****	6,914****	4,667****	11,581****

* A structurally deficient bridge, as defined by FHWA, is one that (1) has been restricted to light vehicles only, (2) is closed, or (3) requires immediate rehabilitation to remain open; a functionally obsolete bridge is one on which the deck geometry, load carrying capacity (comparison of the original design load to the current State legal load), clearance, or approach roadway alignment no longer meet the usual criteria for the system of which it is an integral part.

** The number of deficient bridges (structurally deficient and functionally obsolete) reflects the FHWA's interpretation of the States' inventory data for this program, and may not agree with an individual State's records for these two categories. See pages 46 and 47 for breakdown.

*** Bridges that require load posting fall into two groups. One group includes structurally deficient bridges that have deteriorated to the extent that they cannot carry the load for which they were designed. The second group includes functionally obsolete bridges that are in good condition but the current State legal load exceeds the original design load and, therefore, the bridges require posting. The number of bridges that are closed or posted or that should be posted but are not, are taken from the NBI as submitted by the States.

**** These counts include only bridges funded with HBRRP and SBRP funds. Many bridge improvements are also made using other categories of Federal-aid highway funds and State or local funds.

Since the 1982 STAA was enacted, between 6,000 and 7,000 bridge projects have been authorized each year using all categories of Federal-aid highway program assistance. In calendar year 1986 the total estimated cost of the 5,925 Federal-aid highway bridge projects authorized was $3.6 billion. In addition most States and local governments carry out their own bridge projects without Federal assistance. Based upon the limited data available, the annual cost of these non-federally assisted highway bridge improvement projects is estimated to be between $0.5 and $1.0 billion. These State and locally funded bridge projects result in improvements to perhaps 1,500 to 2,500 bridges annually.

Changes in the Number of Deficient Bridges

In 1986, using Federal, State and local funds, highway agencies were able to improve or replace 11,383 structures to the point that they are no longer structurally deficient. This figure compares with 16,550 structures in 1985. In addition, another 4,751 bridges previously classified as structurally deficient were removed from the NBI as a result of replacement, removal, or system realignment. During the same period, 11,960 bridges in the NBI were reclassified as structurally deficient.

As a result of these changes in status, the number of structurally deficient bridges on the Federal-aid systems increased 2.5 percent (up 888). The number of structurally deficient off-system bridges decreased 5.0 percent (down 5,062).

Of the 11,960 bridges newly classified as structurally deficient during 1986, 4,286 had been classified as functionally obsolete in 1985. Counting bridges no longer classified as structurally or functionally deficient and

bridges newly classified as deficient, the Nation experienced a net decrease in the total number of deficient bridges in 1986. The total decreased from 243,917 on December 31, 1985, to 243,646 bridges at the end of 1986.

The fact that a bridge is "deficient," either structurally or functionally, doesnot imply it is unsafe. With proper load posting and enforcement, many structurally deficient bridges can continue to serve most traffic. Functionally obsolete bridges often have geometric deficiencies (for example they may be narrower than modern standards require) that can be minimized by the use of roadway striping, signs, signals, and crash cushions.

Sufficiency Rating

The FHWA, in consultation with the States, establishes general bridge priorities by assigning a sufficiency rating to each bridge inventoried. The lower the sufficiency rating, the higher the priority for replacement or rehabilitation. The sufficiency rating is based on the following general categories and relative percentages:

55 percent	- structural adequacy and safety
30 percent	- serviceability and functional obsolescence
15 percent	- essentiality for public use
100 percent	

From the States' inventory data, the FHWA compiles the HBRRP selection list for each State. The list includes all deficient bridges with a sufficiency rating of 80 or less. All these bridges are eligible for rehabilitation. Bridges with a sufficiency rating less than 50 are also eligible for replacement. The FHWA

recommends that the States, before deciding to replace a structure, consider the rehabilitation alternative, which is usually less expensive.

Estimating National Bridge Needs

Using bridge cost estimates the States submitted to the NBI, the FHWA has calculated a nationwide average cost per bridge for each highway system for: (1) bridge replacement and (2) rehabilitation. These averages were used to estimate national deficient bridge costs. The following table estimates the cost of replacing or rehabilitating eligible deficient bridges to meet current standards.

ESTIMATED COST OF REPLACING OR REHABILITATING DEFICIENT BRIDGES
ELIGIBLE FOR THE HBRRP
Costs Include Federal and State Shares

System	Bridges Eligible for Replacement or Rehabilitation (Sufficiency Rating < 50)	Estimated Replacement Cost (in Billions)	Bridges Eligible for Rehabilitation (Sufficiency Rating 50 - 80)	Estimated Rehabilitation Cost (in Billions)	Total Cost (in Billions)
Interstate	627	$ .7	3,695	$ 2.2	$ 2.9*
Primary	8,344	8.1	13,216	5.2	13.3
Secondary	13,650	4.8	14,884	2.0	6.8
Urban	4,363	5.1	5,079	2.2	7.3
Total Federal-Aid	26,984	$ 18.7	36,874	$11.6	$30.3
Off-system	107,661	16.7	48,789	4.4	21.1
Total	134,645	$ 35.4	85,663	$16.0	$51.4

* Interstate bridge needs are also eligible for funding under the Interstate Resurfacing, Restoration, Rehabilitation and Reconstruction Program.

The estimated cost of replacing or rehabilitating all deficient bridges, $51.4 billion, has increased 1.2 percent since the last report even though

the number of eligible bridges decreased approximately 1,500. This increase was caused primarily by a rise in the estimated cost reported by the States to replace or rehabilitate off-system bridges.

In estimating costs, the FHWA assumes that bridges with a sufficiency rating less than 50 will be replaced and bridges with a sufficiency rating between 50 and 80 will be rehabilitated. In practice, though, some of the bridges with ratings below 50 will be rehabilitated, not replaced, while others because of funding limitations will be neither rehabilitated nor replaced. Similarly, many of the bridges eligible only for rehabilitation will not be rehabilitated, while others will eventually be replaced (if their sufficiency ratings decrease to below 50).

Rehabilitation, where feasible, is generally more cost effective than replacement. For example each Federal-aid system replacement eligible bridge which can be rehabilitated saves an estimated $400,000. It is FHWA policy to encourage rehabilitation whenever feasible.

Not all bridges in the NBI classified as deficient are eligible for the HBRRP. For example, bridges funded for construction have been removed from the eligible list even though the existing bridges will remain in the NBI as deficient until removed by the State, usually after the structure is demolished, rehabilitation is completed, or traffic is transferred to the new bridge. A large number of deficient bridges, about 15,160, are not eligible for the program because their sufficiency ratings are above 80. The deficiencies identified for these bridges, such as waterway adequacy,

underclearance, and approach roadway, have only a minor effect on the sufficiency rating. Many of these bridges will become eligible for the HBRRP as they age and additional deficiencies develop.

Currently, 220,308 bridges in the NBI are eligible for HBRRP funding. This amounts to about 38 percent of the Nation's 575,607 inventoried highway bridges. Last year's total of 221,817 eligible bridges was 39 percent of the 574,729 bridges in the NBI at the end of 1985.

The estimated $51.4 billion to replace or rehabilitate all deficient bridges has remained relatively stable over the past several years. This fairly stable condition implies that the annual rate at which bridge needs are accruing is in approximate balance with the annual rate at which needs are being met. The balance leaves the statistical backlog of needs unchanged.

The present near-balanced condition is not expected to change significantly over the short term, say 3 to 5 years, assuming current funding levels are maintained. Beyond the short term, however, the FHWA expects bridge needs to increase and continue to increase for many years.

The projected growth in bridge needs is a result of the building boom of the 1950's and 1960's at the height of Interstate highway construction. Bridge construction during this 20-year period accounts for about 40 percent of the deck area of all bridges in service today. Bridge deck area increased at a rate that surpassed the rate of increase in the number of bridges built during the 1950's and 1960's. On the Federal-aid system alone, over 1 billion square feet of bridge decks are now 15 to 35 years old.

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The use of protective systems on bridge decks as a preventive maintenance measure was not standard practice in most States before the mid-1970's. Under average conditions, bridge decks built without corrosion protection for reinforcing steel can be expected to last perhaps 30 to 40 years before replacement or major rehabilitation is required. In severe environments, where traffic or winter salt applications are heavy, bridge decks often experience shorter life.

As the large number of newer bridges advances in age another 5 to 10 years, a sharp increase in bridge rehabilitation and maintenance needs can be expected. Two things are certain:

1. Now is the time to plan for these increases at both State and Federal levels. This planning requires evaluation of present philosophies, policies, standards, maintenance and construction techniques, and improvements -- and changes where needed.

2. A systematic approach to bridge management is needed, one that integrates all decisions regarding bridge maintenance and improvements. These decisions must consider both present and future needs of the entire highway network.

The development and use of bridge management systems are discussed in detail in Part II of this report.

Status of Funds

Congress has authorized the following funds for the HBRRP:

HBRRP FUNDS AUTHORIZED

	FY's 1979-82 (Million)	FY 1983 (Million)	FY 1984 (Million)	FY 1985 (Million)	FY 1986 (Million)
Secretary's discretionary funds	$ 800	$ 200	$ 200	$ 200	$200
Apportioned funds excluding HPR* funds (See Tables 1A - 1C)	3,116	1,347	1,407	1,510	1,656
Acceleration of bridge projects	200	0	0	0	0
Administration	84	32	17	17	19
HPR Funds**	0	21	21	23	25
Special Funding (Eugene Talmadge Memorial Bridge)	0	0	5	0	0
Totals	$4,200	$1,600	$1,650	$1,750	$1,900***

* HPR = Highway Planning and Research. The 1982 STAA required that 1-1/2 percent of apportioned HBRRP funds, as well as the apportioned Federal-aid systems funds, be deducted for HPR.

** These funds are the amounts derived from bridge funds; however, they may be used for planning and research related to highways as well as bridges.

*** The Consolidated Omnibus Budget Reconciliation Act of 1985 (Public Law 99-272) changed the FY 1986 authorization for HBRRP from $2.05 billion to $1.9 billion.

The 1987 STURAA enacted on April 2, 1987 (Public Law 100-17), provides $1.63 billion per year in HBRRP funds for FY 1987 through FY 1991.

From FY 1979 through FY 1986, the States obligated a total of $9,644.5 million of HBRRP funds. This amount was approximately 90.4 percent of the total discretionary and apportioned funds available (compared with the 91.1 percent shown in the Seventh Annual Report). The States obligated an additional $296.4 million

during the first quarter of FY 1987. The following tabulation shows discretionary and apportioned fund obligations:

HBRRP OBLIGATIONS BY FISCAL YEAR

Fiscal Year	Secretary's Discretionary Fund (Million)	Apportioned Funds (Million)	Total Funds Obligated (Million)
1979	$ 178.9	$ 423.4	$ 602.3
1980	140.6	619.4	760.0
1981	164.4	730.8	895.2
1982	233.4	744.9	978.3
1983	216.2	1,196.0	1,412.2
1984	238.1	1,512.2	1,750.3
1985	206.3	1,382.1	1,588.4
1986	215.2	1,442.5	1,657.7
1987 (1st qtr.)	0	296.4	296.4
Total	$1,593.1	$8,347.7	$9,940.8

The $9.941 billion is an increase of $1.448 billion over the amount obligated through December 31, 1985. The $1.448 billion was used to improve 3,155 bridges. These numbers do not include State and local funds spent on bridges.

In addition to the $9.941 billion of HBRRP funds obligated through December 31, 1986, the States spent $4.935 billion of other Federal-aid funds for bridge replacement or rehabilitation projects during the same period. This amount includes funds used only for bridge work, not related items such as approaches, utility relocation, right-of-way costs, or funds for new bridges on new roadway alignments.

The $4.935 billion in non-HBRRP Federal-aid obligations for bridge replacement or rehabilitation was distributed among the Federal-aid systems as follows:

OTHER FEDERAL-AID FUNDS OBLIGATED FOR
BRIDGE REPLACEMENT AND REHABILITATION
(in millions)

Fiscal Year

System	1979	1980	1981	1982	1983	1984	1985	1986	1st quarter 1987	Total
Interstate	$130	$116	$198	$352	$241	$524	$602	$762	$140	$3,065
Primary	44	158	103	115	139	92	159	179	93	1,082
Secondary	12	14	16	36	40	32	58	41	12	261
Urban	36	35	24	51	97	98	96	81	9	527
Total	$222	$323	$341	$554	$517	$746	$915	$1,063	$254	$4,935

Section 144(g)(2) of Title 23, U.S. Code, requires the States to use at least 65 percent of each year's HBRRP apportionment on Federal-aid system bridges (see Tables 1A and 2A). In addition, the States must use no less than 15 percent on bridges off the Federal-aid systems (see Tables 1B and 2B). The remaining 20 percent of each State's apportionment of HBRRP funds may be used on or off the Federal-aid systems at the discretion of the State (see Tables 1C and 2C).

Most States also use apportioned HBRRP funds to inventory, inspect, and evaluate bridges as required by the NBIS. Since the beginning of the HBRRP in 1979, the States have obligated $281.9 million for this purpose. In all, 40 States obligated $163.4 million for Federal-aid system bridges. A somewhat different 40 States obligated $118.5 million for off-system bridges. In addition, 10 States obligated $1.1 million to inventory bridges for historic significance as authorized in the 1978 STAA. Some States use non-HBRRP funds for the NBIS and

historic inventories. Also, nine States obligated $9.8 million in HBRRP funds for load posting of off-system bridges.

Rehabilitation

The 1978 STAA expansion of the bridge program to permit rehabilitation gave the States and local governments greater flexibility in deciding how to correct deficiencies. Bridge rehabilitation projects continue to be an important part of the bridge program. Through FY 1985, the States used nearly 19.6 percent of obligated HBRRP funds on rehabilitation projects. The percentage is 18.3 percent through FY 1986.

Rehabilitation can extend bridge service life if undertaken before deterioration reaches an advanced stage. By accomplishing rehabilitation early, a State can avoid more costly replacement, and the bridge can provide reliable service for many years. In developing HBRRP projects, the States consider rehabilitation as an alternative to replacement. Rehabilitation often costs far less than replacement and is a cost-effective procedure for larger bridges.

Off-System Funds

As noted previously, the States must use at least 15 percent of the apportioned HBRRP funds on off-system bridges. The States may use another 20 percent either on or off the Federal-aid systems.

From FY 1979 through FY 1986, the States obligated a total of $1.627 billion (20.2 percent of the total apportioned funds) for off-system bridges, including $327 million in 1986 (22.6 percent of the amount obligated during the year).

The States obligated an additional $34 million in the first quarter of FY 1987, which brought total obligations for off-system bridges from the beginning of FY 1979 through the first quarter of FY 1987 to $1.661 billion.

This total includes $0.510 billion (31 percent) of the $1.622 billion the States obligated from the 20 percent of apportionments that can be used on or off the Federal-aid systems. The States used the remaining $1.112 billion (69 percent) for Federal-aid system bridges.

Bridge program legislation provides for reduced expenditure on off-system bridges if a State does not have enough deficient off-system bridges to justify using 15 percent of its apportionment. None of the States or Puerto Rico has requested a waiver. The District of Columbia does not have any deficient off-system bridges and, therefore, annually requests and receives a waiver of the 15 percent requirement.

Acceleration of Bridge Projects

Section 147 of the 1978 STAA, Acceleration of Bridge Projects, directs the Secretary to complete two Federal-aid system projects that cross major bodies of water. The purpose is to demonstrate the feasibility of reducing the time needed to replace unsafe bridges. In accordance with congressional direction, the FHWA selected the U.S. Grant (Portsmouth) Bridge over the Ohio River between Portsmouth, Ohio, and South Shore, Kentucky, and the East Huntington Bridge over the Ohio River at Huntington, West Virginia.

The substructure and superstructure of the U.S. Grant Bridge are complete. The Kentucky and Ohio approaches are under construction, while construction of the concrete deck will begin soon. The estimated completion date is Spring 1988.

The West Virginia Department of Highways opened the East Huntington Bridge on August 8, 1985. The preliminary design to extend the structure to U.S. Route 60 has been received but the local government requested study of additional alternatives. If an alternative scheme is adopted, additional time will be required to prepare project plans.

The two Acceleration of Bridge Projects will not require the full amount of funds made available for them. The Consolidated Omnibus Budget Reconciliation Act of 1985 (Public Law 99-272) amended Section 147 to permit $65 million of the excess funds to be used on three Ohio River bridge replacement projects between Kentucky and Ohio. An additional $33 million was redistributed to all the States based on the same factors used to distribute apportioned HBRRP funds (Section 144(e) of Title 23, U.S. Code).

The Reconciliation Act requires enough funds to be set aside from the reprogrammed $65 million reprogramming to complete two of the three Ohio River bridge projects. These two bridges cross the Ohio River from Newport and Covington, Kentucky, to Cincinnati, Ohio. When these two projects are completed, any funds remaining from the $65 million are to be used on the third project, which is located between Maysville, Kentucky, and Aberdeen, Ohio. The Federal share of project costs is 90 percent and the funds will remain available until used. The Reconciliation Act placed this funding, outside the obligation ceiling imposed on most Federal-aid highway funding categories, including the HBRRP.

As required by the Reconciliation Act, the three projects will use state-of-the-art design and construction technology. The goal is to choose alternatives for all design elements, including the decking, that will provide the best life-cycle costs, while minimizing future maintenance and rehabilitation costs. The Central Bridge between Newport and Cincinnati is under design and the Suspension Bridge between Covington and Cincinnati is in the planning phase.

A report is to be submitted to Congress 1 year after each state-of-the-art project is completed. The report will discuss the projects and how the techniques used can be applied to other bridge projects. Additional reports are required at intervals of 6, 11 and 21 years.

Summary for 1986

In 1986, the Nation's bridges remained a high priority of the FHWA and the State highway agencies. Because of this priority attention, 11,383 structurally deficient bridges were improved or replaced during the year with Federal, State and local funds.

Although the States can finance bridge projects with funds from various sources, including the regular Federal-aid highway program, the HBRRP played a major role in bridge activities during 1986. The importance of the HBRRP can best be shown by the following facts:

1. The States obligated $1.658 billion in HBRRP funds during FY 1986 and $0.296 billion in the first quarter of FY 1987, bringing HBRRP

obligations to $9.941 billion since the start of the program in fiscal year 1979.

2. In addition to the $1.658 billion of HBRRP funds obligated in FY 1986, the States obligated $1.063 billion to replace or rehabilitate bridges with Federal-aid funds from non-HBRRP categories. This brings the total funding for bridge projects under the Federal-aid highway program to $2.721 billion in 1986.

3. During 1986, the States improved an additional 3,155 bridges under the HBRRP, bringing the total to 24,553 since the program began in 1979.

In spite of the progress in 1986, the Nation's bridge problem remains serious.

1. Of the Nation's 575,607 inventoried bridges, 220,308 (38 percent) are deficient and eligible for replacement or rehabilitation under the HBRRP.

2. In 1986, 11,960 bridges were newly classified as structurally deficient.

Bridge Program Summary 1971-1986

The SBRP, which began the emphasis on improving deficient bridges, served well in the 8 years of its existence (1971 through 1978). This early program identified basic bridge needs and directed the bridge program toward its successor, the HBRRP. It also removed some of the most deficient bridges from the Federal-aid highway network.

Initially, the establishment of the HBRRP placed a heavy burden on State and local governments. Adding off-system bridges on public roads to NBIS coverage more than doubled the number of bridges that must be inventoried and inspected. The inventory and inspection of all bridges on public roads is complete.

The program change permitting rehabilitation under the HBRRP gave the States and local governments greater flexibility in selecting bridge projects to meet their individual needs. The States and local governments have spent 18.3 percent of all obligated HBRRP funds for rehabilitation.

The increased funding levels in the 1978 and 1982 STAA's (which made more funds available each year than the total for the SBRP) required the States and local governments to accelerate development of construction plans. State and local highway officials responded to the need. As a result, the number of bridges replaced or rehabilitated annually under the HBRRP has increased each year. In 1986, State and local governments opened 3,287 bridges as the result of Federal-aid funding. In 1978, the last year of the SBRP, the number opened was 383.

In the last 4 years of the HBRRP, the number of deficient bridges in the NBI has decreased each year.

Overall, most States have done an excellent job in obligating HBRRP funds. The total accumulative obligation rate of 90.4 percent through FY 1986 demonstrates the popularity of the bridge program and the importance State and local governments have given to it.

The following table compares the three stages of the bridge program.

Summary of Bridge Program

	SBRP 1971-78	HBRRP 1979-82	HBRRP 1983-86
Years of Program	8	4	4
Number of Bridges in NBI	241,843*	564,499	575,607
Number of Deficient Bridges	40,653*	253,196	243,646
Reported Needs At End of Each Enacted Program (in billions)	$29.3	$48.9	$51.4
Authorization (in billions)	$.83	$4.2	$6.9**
Number of Bridges Funded Exclusively Under Each of the 3 Listed Bridge Programs	2,863	7,830	15,441
Cumulative Percent of Funds Spent on Rehabilitation	-	15.7	18.3
Cumulative Percent of Funds Obligated on Off-system	-	18.6	20.2

* Federal-aid system only

** The Consolidated Omnibus Budget Reconciliation Act of 1985 changed the FY 1986 authorization from $2.05 billion to $1.9 billion.

Some bridge concerns remain. Even though the total number of deficient bridges has dropped slightly over the last 4 years, the number of deficient Federal-aid system bridges has continued to increase gradually. These are the bridges that carry about 85 percent of all traffic. The rate of increase will accelerate sharply in 5 to 10 years as the many bridges built in the 1950's and 1960's age and develop deficiencies. Deterioration could accelerate even faster if the allowable size and weight of vehicles increase.

The expected increase in needs in the not-too-distant future make effective planning and efficient use of all available resources all the more important. Adoption of a bridge management system is essential for each State to integrate all decisions on bridges and establish priorities from the initial planning through the design, construction, inspection, and maintenance phases.

The 1987 STURAA requires that the Secretary of Transportation conduct a study of State bridge management programs to determine whether the States need to establish comprehensive bridge management programs. The study report must be submitted to the Congress within 180 days of enactment of the 1987 STURAA and the report must contain administrative and legislative recommendations and minimum requirements for State bridge management programs which the Secretary considers appropriate. This study has begun.

In addition, Section 123 of the 1987 STURAA added four new categories to HBRRP eligibility, (1) replacement of low water crossings, (2) bridges destroyed before 1965, (3) replacement of ferries in existence on January 1, 1984, and (4) replacement of bridges rendered obsolete by United States Corps of Engineers flood control or channelization projects. The new act also emphasizes the importance of preservation of historic bridges and the bridge inspection program. Section 125 of the 1987 STURAA makes the bridge inspection program a separate "stand alone" portion of Title 23, U.S. Code. The Secretary is also required under this new provision to establish a procedure for national certification of highway bridge inspectors.

Partially in response to the 1987 STURAA, the FHWA published a Notice of Proposed Rulemaking in the April 7, 1987, Federal Register which includes a proposed

provision for national bridge inspector certification through the National Society of Professional Engineer's National Institute for Certification in Engineering Technologies.

PART II

Bridge Program Management

Background

In 1984, the FHWA conducted a top-level management review to evaluate administration of the entire Federal-aid bridge program. The results provided a basis for improving the program and a focus for greater FHWA and State management attention. Part II of the annual reports for 1984 and 1985 discussed details of the review and the FHWA's actions on its recommendations. Part II of this report to Congress will discuss additional actions taken in 1986.

Recommendations Implemented

The review report, which the FHWA accepted in March 1985, included 17 recommendations. Of these, 11 have been implemented or recommended to Congress for legislative change. They are:

Recommended for Legislative Change

1. Remove Interstate bridges from eligibility for HBRRP funds.

   The Administration included this recommendation in its proposed bill for reauthorizing the highway program. This was not implemented by the Congress in the 1987 STURAA.

2. The FHWA should define the Federal role in the bridge program.

The Administration's bill proposed that Federal HBRRP involvement in the bridge program be limited to the primary system. Bridges on systems other than the Interstate and primary should be the responsibility of State and local governments with the assistance of proposed Federal block grant funds. This recommendation was not implemented in the 1987 STURAA.

Implemented

1. The FHWA issued a policy withholding Federal-aid project approvals in jurisdictions not in compliance with the NBIS.

2. Guidelines were issued defining in more detail than in the past the limits permitted on HBRRP projects, both for the length of approach and the amount of funds.

3. The FHWA established a policy that new bridges built to less than the American Association of State Highway and Transportation Officials (AASHTO) standards will not be counted as deficient, appear on a selection list of eligible bridges, or be considered in calculating apportionment factors.

4. The FHWA retained the current apportionment formula for highway systems that continue to have Federal involvement.

5. The FHWA rescinded use of the Structure Inventory and Appraisal (SI&A) short form.

6. The FHWA is emphasizing the importance of the frequency and depth of inspection.

7. The FHWA is providing technical and program assistance.

8. The FHWA is encouraging the States to enter their revised inventory data within the specified 90 days of inspection.

9. The FHWA published a manual for inspection of fracture critical bridge details.

Recommendations remaining to be implemented

1. The FHWA should define priority need and set criteria for determining which bridges fall into that category.

The Secretary's Annual Reports over the last several years have generally shown increases in both the number of bridges eligible for replacement or rehabilitation under the HBRRP and the estimated cost of bringing all deficient highway bridges up to standard. The estimate to improve all deficient bridges to current standards is idealistic. In reality, many eligible bridges will not be replaced or rehabilitated within the next decade or more. A measure that takes into account the severity of deficiency, not just deficiency, would give a more realistic picture of the Nation's priority bridge needs.

With this consideration, the FHWA reviewed the HBRRP eligibility criteria for defining deficient bridges. The purpose of the review was to find a

way of comparing structurally deficient and functionally obsolete bridges to establish priorities for replacement or rehabilitation under the HBRRP.

The legislation governing HBRRP project approval requires the Secretary to consider projects that will remove from service the highway bridges that are most in danger of failure. At the same time, the legislation requires that rehabilitation be considered for structurally deficient and functionally obsolete bridges. Using this legislative guidance and NBI data, the FHWA's Bridge Division prepared a draft proposal for changing the deficient bridge classification. The proposal is under review within FHWA.

2. Revise HBRRP eligibility limits to provide a more realistic picture of attainable bridge conditions.

Any deficient bridge with a sufficiency rating of 80 or less is eligible for rehabilitation under the HBRRP. Those with a rating below 50 are also eligible for replacement, whether they are structurally deficient or functionally obsolete. The FHWA recommends that States first consider rehabilitating bridges with ratings below 50, not simply replace them, the more expensive alternative.

Recent experience with innovative but proven bridge rehabilitation techniques suggests that replacement eligibility criteria should be tightened to ensure more bridges are rehabilitated rather than replaced. This change would result in much more cost-effective use of HBRRP funds because more bridges could be improved at a faster rate.

Further, the candidate selection list of eligible bridges contains many bridges with a low priority that should not be replaced or rehabilitated at this time and, realistically, will not be. In particular, many bridges with high sufficiency ratings are considered deficient only because of geometrics. These bridges are structurally sound and are good candidates for cost-effective traffic control measures, rather than rehabilitation or replacement.

To correct these problems, the FHWA considered various sufficiency rating eligibility criteria. A draft administrative proposal for tightening the criteria is under review.

3. The FHWA should include certification by the National Institute for Certification of Engineering Technologies (NICET) in the next revision to NBIS regulations as an alternative minimum for meeting team leader or inspector qualifications.

The NBIS set minimum qualifications for the individual in overall charge of the inspection program and the bridge inspection team leaders (See appendix B, Section 650.307). Bridge inspectors do not have to meet minimum qualifications under the NBIS. One method of ensuring greater compliance with the NBIS would be to permit certification for bridge inspectors and team leaders as an alternative to the current NBIS requirements.

The NICET, under the sponsorship of the National Society of Professional Engineers, has prepared a program to certify bridge inspectors and team leaders. The process, which will be available soon, will provide a way to certify inspectors and team leaders to nationally as competent in bridge inspection. Technicians will be able to take tests in bridge inspection that, combined with work experience, will establish their competence. The program will be added to several others the NICET has in operation.

The FHWA has prepared a Notice of Proposed Rulemaking (NPRM) to modify the NBIS. One of the proposed revisions in the NPRM is acceptance of the certification procedure for bridge inspectors and team leaders.

4. Expand the AASHTO Manual for Maintenance Inspection of Bridges to include explicit instructions for the more critical portions of a bridge.

This manual sets out the guidelines for conducting bridge inspections to meet the requirements of the NBIS. The instructions are general. They do not provide details on inspecting some bridge types. The general nature of the instructions is intentional. It allows flexibility for the bridge owner and the rating agency. However, the result has been some variation in inspections because portions of the inspections and evaluations are subjective. Some officials have suggested that explicit instructions, including examples, should be provided for the more critical portions of a bridge, not only for uniformity, but also for thoroughness.

The AASHTO is expanding the manual to include explicit guidance. The FHWA is providing technical assistance. Some interim changes are being prepared for release and AASHTO intends to revise the entire document.

5. The FHWA should encourage the States and help them develop their own bridge program management systems for planning, budgeting, and priority decisions as well as for getting the most benefit out of bridge expenditures.

Part I of this report to Congress describes the magnitude of the bridge replacement and rehabilitation problem. Obviously, Federal, State, and local governments do not have enough funds to meet all reported bridge replacement and rehabilitation needs or expected needs. Inevitably, transportation officials must be resourceful in making trade-offs to ensure bridges are safe and properly maintained, and that the original investment is protected. Because all bridge needs cannot be met within the HBRRP, new ways must be found to increase efficiency, cost effectiveness and, especially, the service life of existing bridges.

Managing a successful bridge program requires assembly and evaluation of enough facts to develop bridge projects by priority. The more complete the information, the more efficient the use of funding. An organized system for bridge inspection and inventory as well as for data gathering and analysis is needed to make replacement, rehabilitation, and maintenance decisions. A total bridge management system can help establish both the priority and timing of needed projects and help estimate future needs.

A number of States have made significant progress over the past year in developing bridge management systems. In addition, the FHWA has prepared a demonstration project to promote bridge management systems and is presenting the program to interested States. Any State or local agency interested in improving management of its bridge programs could benefit from this demonstration project.

A bridge management system is important, regardless of the funding source. A State or local government must manage its total bridge program to determine the best use of all available funds, whether they are from Federal, State, or local sources.

New concepts in bridge management are emerging from the States' development efforts. For example, one useful concept for defining needs is level-of-service goals. These goals are target values for a set of bridge attributes. They are selected to measure the ability of a bridge to serve its intended function. Therefore, goals vary with traffic characteristics and the function of the roadway, not just the condition of each bridge. The goals are set with the understanding that widely different traffic characteristics exist throughout the highway system and that many bridges on local roads can serve traffic needs adequately at lesser load capacity, width, vertical clearance, or other criteria than would be necessary on heavily travelled main highways. Under this system, needs are defined by lack of achievement of predetermined level-of-service goals.

This concept has been introduced into bridge management programs of a number of States. Defining or redefining needs by level-of-service for different highway functional classifications may significantly change the way a State assesses total program needs. This is especially true if many of a State's bridges are on low-volume roads serving mainly local traffic.

6. The FHWA Bridge Division should review the NBI and the coding guide for possible revisions to reflect changes in the program and ensure compatibility with other data collection systems.

The FHWA last updated the coding guide for the SI&A data on the Nation's bridges in 1979. Since then, changes have occurred that create a need for additional data while eliminating the need for some data collected by the present form. Also, several items in the coding guide do not correlate with information collected for other studies. This variation of data prevents the NBI from supplementing other information collection systems.

A joint FHWA-State task force drafted a revised coding guide for review by the States during the AASHTO Bridge Subcommittee meetings in April 1987. The members of the subcommittee discussed the revision during the meeting. When AASHTO endorses the coding guide, it will be published for use by all agencies involved in the inventory and inspection of highway bridges. When finally adopted, the revised coding guide will provide the data needed to assess the Nation's bridge needs in a format that is compatible with data collected by others.

Summary

The 1984 bridge program management review identified 17 areas for improvement. They varied from continued emphasis on some items and clarification of others to increased efforts to bring about compliance with the governing regulations. The FHWA has implemented 11 of these recommendations and will continue to work on the six others as explained in this report.

Implementing the 17 recommendations will result in a number of benefits.

1. Under new criteria, the list of bridges eligible for the HBRRP will present a more realistic picture of priority bridge needs. Therefore, progress can be measured more easily and priority needs anticipated.

2. Bridge program funds will be directed to the more structurally inadequate bridges.

3. The NBI data will be more complete and useful following changes in coding and data collection forms.

4. Uniformity in bridge inspections and NBI data will be enhanced.

TABLE 1A

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

STATUS OF FUNDS PROVIDED FOR
BRIDGE REPLACEMENT & REHABILITATION MANDATORY 65% ON-SYSTEM - 118

AS OF DECEMBER 31, 1986

STATE	TOTAL AVAILABLE	OBLIGATIONS DURING FY 87	OBLIGATIONS TOTAL TO DATE	UNOBLIGATED BALANCE
ALABAMA	109,399,011.00	998,327.71CR	108,276,965.78	1,122,045.22
ALASKA	14,737,168.00	146,744.00CR	8,495,012.56	6,241,155.44
ARIZONA	14,737,168.00	20,611.00	11,443,717.32	3,293,450.68
ARKANSAS	106,228,170.00	4,006,643.00	103,695,718.00	2,532,452.00
CALIFORNIA	162,011,921.00	808,665.90CR	160,974,471.17	1,037,449.83
COLORADO	52,379,598.00	424,825.72CR	51,884,623.02	495,174.98
CONNECTICUT	86,014,484.00	3,330,586.86	85,9 0,832.00	73,652.00
DELAWARE	14,737,168.00	7,992.21CR	14,683,459.97	53,708.03
FLORIDA	137,998,296.00	880,451.00CR	136,725,182.00	1,273,114.00
GEORGIA	132,817,710.00	555,439.16CR	132,201,950.00	615,760.00
HAWAII	17,091,219.00		17,091,218.92	.08
IDAHO	25,022,887.00	970,682.82	24,714,867.24	308,019.76
ILLINOIS	297,230,911.00	242,329.78	297,217,427.11	13,483.89
INDIANA	113,013,508.00	5,692,387.53	104,548,620.34	8,464,887.66
IOWA	147,581,028.00	6,698,203.46	142,955,561.61	4,625,466.39
KANSAS	163,610,039.00	7,252,249.46	143,001,506.61	20,608,528.39
KENTUCKY	146,279,353.00	284,713.71	146,193,141.07	80,211.93
LOUISIANA	218,097,847.00	693,924.52	209,272,122.60	8,825,724.40
MAINE	31,996,087.00	2,114,149.66	31,947,165.92	48,921.08
MARYLAND	108,234,221.00	480,439.00CR	107,559,057.00	679,164.00
MASSACHUSETTS	134,229,649.00	9,658,334.38	130,539,611.63	3,690,037.37
MICHIGAN	89,191,163.00	3,585,024.72	76,805,527.96	6,385,635.04
MINNESOTA	131,809,960.00	2,829,214.54	124,300,598.29	7,509,361.71
MISSISSIPPI	105,029,481.00	34,861.00	104,730,987.00	298,494.00
MISSOURI	212,274,571.00	21,818,960.12	212,014,981.48	259,589.52
MONTANA	38,544,452.00	1,935,531.61	36,435,240.75	8,109,111.25
NEBRASKA	100,783,447.00	3,564,693.76	97,852,815.76	2,930,631.24
NEVADA	14,737,168.00	1,674,628.00	12,977,211.00	1,759,967.00
NEW HAMPSHIRE	46,144,939.00	1,475,374.71	40,975,968.43	5,168,970.57
NEW JERSEY	227,214,897.00	9,684,156.96	199,682,017.92	27,532,879.08
NEW MEXICO	21,994,569.00	659,004.45	20,402,944.46	1,563,624.54
NEW YORK	548,976,297.00	204,851.00CR	548,042,539.52	935,757.48
NORTH CAROLINA	177,495,354.00	5,401,895.00	160,739,156.00	16,756,198.00
NORTH DAKOTA	33,082,173.00	1,293,156.75	33,009,924.51	72,248.49
OHIO	167,761,584.00	4,000,857.20	163,624,973.00	4,136,531.00
OKLAHOMA	104,507,007.00	9,777,042.33	80,712,331.20	23,796,675.80
OREGON	59,041,117.00	2,035,048.42	50,511,975.88	8,529,141.12
PENNSYLVANIA	361,442,572.00	13,614,131.73	332,660,978.03	28,781,593.97
RHODE ISLAND	21,585,160.00	652,596.65	16,903,781.28	4,681,378.72
SOUTH CAROLINA	67,193,769.00	6,301,116.40	51,619,179.10	15,574,589.90
SOUTH DAKOTA	29,780,356.92	2,664,470.09	25,662,132.78	4,118,224.14
TENNESSEE	210,043,991.00	1,450,453.00CR	208,593,098.00	1,450,453.00
TEXAS	248,663,630.00	12,609,638.26	166,098,051.61	82,567,628.39
UTAH	14,737,168.00	149,872.19	13,808,853.26	928,314.74
VERMONT	42,111,634.00	4,061,311.83	38,293,320.17	3,818,313.83
VIRGINIA	132,784,958.00	6,782.50	132,774,603.91	10,354.09
WASHINGTON	133,310,979.00	11,946,486.25	116,657,635.12	16,653,343.88
WEST VIRGINIA	109,915,906.00	3,520,323.31	80,068,197.01	29,847,708.99
WISCONSIN	128,673,983.00	9,541,076.44	117,023,103.90	11,650,879.10
WYOMING	14,737,168.00	168,032.00	12,821,293.00	1,915,875.00
DIST. OF COL.	47,667,883.00	1,739,759.80	32,879,466.16	14,988,416.84
PUERTO RICO	16,246,378.00	34,524.88CR	12,066,488.19	4,179,889.81
TOTAL	9,887,096,691.92	160,212,804.42	9,486,106,497.45	400,990,194.47

TABLE 1B

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

STATUS OF FUNDS PROVIDED FOR
BRIDGE REPLACEMENT & REHABILITATION MANDATORY 15% OFF-SYSTEM - 117

AS OF DECEMBER 31, 1986

STATE	TOTAL AVAILABLE	OBLIGATIONS DURING FY 87	OBLIGATIONS TOTAL TO DATE	UNOBLIGATED BALANCE
ALABAMA	25,245,926.00	573,708.09	24,056,656.14	1,189,269.86
ALASKA	3,400,883.00	20,109.00	2,271,423.41	1,129,459.59
ARIZONA	3,400,883.00	167,266.00CR	3,089,152.54	312,730.46
ARKANSAS	24,514,192.00	248,138.00	24,448,282.00	65,910.00
CALIFORNIA	37,387,365.00	152,635.95CR	37,234,728.08	152,636.92
COLORADO	12,087,600.00	1,447,340.00	11,980,694.51	106,905.49
CONNECTICUT	19,249,496.00	205,354.25	8,001,842.36	11,247,653.64
DELAWARE	3,400,883.00	31,609.65CR	3,365,454.79	32,428.21
FLORIDA	31,845,761.00	254,721.00CR	31,483,247.00	362,514.00
GEORGIA	30,650,241.00	88,744.00	30,574,926.76	75,314.24
HAWAII	3,944,126.00	12,000.00	1,664,717.35	2,279,408.65
IDAHO	5,774,513.00	39,665.33CR	5,719,238.22	55,274.78
ILLINOIS	68,591,747.00	1,094,683.85	68,362,161.26	229,585.74
INDIANA	26,052,041.00	99,970.80	25,429,635.87	651,405.13
IOWA	34,057,159.00	182,853.33	33,944,319.40	112,839.60
KANSAS	37,756,161.00	287,432.71	37,718,850.94	37,310.06
KENTUCKY	33,756,774.00	46,400.00	33,745,581.99	11,192.01
LOUISIANA	50,330,273.00	33,320.86	49,971,782.06	358,490.94
MAINE	7,383,712.00	.01CR	7,367,969.98	15,742.02
MARYLAND	24,977,125.00	9,327.00CR	19,014,687.00	5,962,438.00
MASSACHUSETTS	30,976,072.00	570,042.80	16,605,576.73	14,370,495.27
MICHIGAN	19,659,497.00	7,044.68CR	19,648,630.35	10,866.65
MINNESOTA	30,417,684.00	22,783.31CR	30,000,583.84	417,100.16
MISSISSIPPI	24,236,649.00	1,754,937.00	23,126,371.00	1,110,278.00
MISSOURI	48,586,440.00	4,684,101.87	48,190,363.71	795,876.29
MONTANA	8,894,873.00	290,386.95	8,668,623.38	226,249.62
NEBRASKA	23,257,720.00	392,102.73	23,164,250.46	93,469.54
NEVADA	3,400,883.00	16,785.00CR	2,430,819.00	970,264.00
NEW HAMPSHIRE	10,648,834.00	1,314,407.80	9,679,675.55	969,158.45
NEW JERSEY	52,434,208.00	7,329,962.59	25,741,446.23	26,692,761.77
NEW MEXICO	5,068,747.00		5,068,747.00	
NEW YORK	126,686,839.00	27,966.00CR	126,492,498.00	194,341.00
NORTH CAROLINA	40,960,465.00	55,714.00	40,251,708.00	708,757.00
NORTH DAKOTA	7,634,347.00	139,050.51	7,578,431.71	55,915.29
OHIO	38,714,193.00	1,853,327.00	32,921,201.00	5,792,992.00
OKLAHOMA	24,117,001.00	2,775,709.54	18,617,984.27	5,499,016.73
OREGON	13,624,872.00	744,809.61	12,597,343.38	1,027,528.62
PENNSYLVANIA	83,409,824.00	951,788.93	69,316,411.94	14,093,412.06
RHODE ISLAND	5,010,592.29	255,184.97	4,971,524.88	39,067.41
SOUTH CAROLINA	15,506,255.00	1,589,680.32	15,048,168.19	458,086.81
SOUTH DAKOTA	6,489,969.00	1,123,656.00	5,893,970.36	595,998.64
TENNESSEE	48,471,589.00	272,446.00CR	48,199,143.00	272,446.00
TEXAS	57,383,927.00	8,028,153.08	57,340,253.69	43,673.31
UTAH	3,400,883.00	91,600.59	3,357,514.75	43,368.25
VERMONT	9,718,069.00	11,232.84	9,704,766.60	13,302.40
VIRGINIA	30,642,681.00	913,707.02	26,799,122.91	3,843,558.09
WASHINGTON	30,764,072.00	720,313.11	30,125,058.11	639,013.89
WEST VIRGINIA	25,365,209.00	27,080.00CR	24,139,801.00	1,225,408.00
WISCONSIN	30,963,225.00	1,359,337.53	26,886,152.63	4,077,072.37
WYOMING	3,400,883.00	1,064.00CR	3,399,819.00	1,064.00
DIST. OF COL.	23,108.00			23,108.00
PUERTO RICO	3,749,163.00	28,512.02CR	3,624,269.47	124,893.53
TOTAL	1,348,453,634.29	40,230,335.73	1,239,636,681.80	108,816,952.49

TABLE 1C

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

STATUS OF FUNDS PROVIDED FOR
BRIDGE REPLACEMENT & REHABILITATION MANDATORY 20% ON/OFF-SYSTEM - 114

AS OF DECEMBER 31, 1986

STATE	TOTAL AVAILABLE	OBLIGATIONS DURING FY 87	OBLIGATIONS TOTAL TO DATE	UNOBLIGATED BALANCE
ALABAMA	33,661,232.00	5,924.38	33,464,960.82	196,271.18
ALASKA	4,534,511.00	190,976.00	2,431,074.00	2,103,437.00
ARIZONA	4,534,511.00		2,803,755.69	1,730,755.31
ARKANSAS	32,685,587.00	1,150,415.00	32,663,524.00	22,063.00
CALIFORNIA	49,849,818.00	1,768,559.78CR	48,044,761.58	1,805,056.42
COLORADO	16,116,796.00	2,759,119.29	14,299,455.18	1,817,340.82
CONNECTICUT	26,465,991.00	2,147,613.90	25,438,349.86	1,027,641.14
DELAWARE	4,534,511.00	311,302.00CR	4,222,756.52	311,754.48
FLORIDA	42,461,013.00	1,621,364.00	41,612,936.00	848,077.00
GEORGIA	40,966,986.00	7,034,054.88	39,609,071.84	1,257,914.16
HAWAII	5,258,835.00		5,258,834.48	.52
IDAHO	7,699,348.00	386,122.80	7,584,069.81	115,278.19
ILLINOIS	91,455,662.00	95,069.40CR	91,296,730.70	158,931.30
INDIANA	34,773,383.00	4,637,691.01	27,856,498.29	6,916,884.71
IOWA	45,409,544.00	3,056,025.69	45,110,035.29	299,508.71
KANSAS	50,341,547.00	78,950.65	49,383,887.64	957,659.36
KENTUCKY	45,009,027.00	17,303.30	45,001,389.41	7,637.59
LOUISIANA	67,107,027.00	1,773,516.58	63,183,985.42	3,923,041.58
MAINE	10,844,945.00	57,199.88	10,714,719.90	130,225.10
MARYLAND	34,756,758.00	1,337,033.00	29,020,631.00	5,736,127.00
MASSACHUSETTS	41,301,427.00	818,860.00	30,207,096.97	11,094,330.03
MICHIGAN	26,212,661.00	868,088.27	25,859,648.27	353,012.73
MINNESOTA	40,556,909.00	361,518.14	34,119,985.26	6,436,923.74
MISSISSIPPI	32,315,529.00	1,752,752.00	31,764,072.00	551,457.00
MISSOURI	65,315,250.00	10,482,464.11	59,722,432.72	5,592,817.28
MONTANA	11,859,827.00	330,653.00	11,315,814.89	544,012.11
NEBRASKA	31,010,290.00	3,151,306.94	27,690,825.77	3,319,464.23
NEVADA	4,534,511.00	52,800.00	2,447,601.00	2,086,910.00
NEW HAMPSHIRE	14,198,440.00	5,837.49CR	13,192,291.90	1,006,148.10
NEW JERSEY	69,912,275.00	21,695,160.00	46,333,945.60	23,578,329.40
NEW MEXICO	6,728,325.00	88,853.78CR	3,243,952.55	3,514,372.45
NEW YORK	168,915,784.00	516,111.00CR	168,388,835.00	526,949.00
NORTH CAROLINA	54,613,950.00	3,993,645.00	54,287,384.00	326,566.00
NORTH DAKOTA	10,179,126.00	2,813.81CR	10,038,447.57	140,678.43
OHIO	51,618,920.00	17,885,785.00	35,854,141.00	15,764,779.00
OKLAHOMA	32,155,997.00	472,953.55	13,421,275.58	18,734,721.42
OREGON	18,166,494.00	492,619.59	14,760,438.86	3,406,055.14
PENNSYLVANIA	111,213,094.00	46,050.00CR	91,803,022.45	19,410,071.55
RHODE ISLAND	6,496,496.90	235,200.00	5,189,154.51	1,307,342.39
SOUTH CAROLINA	20,675,003.00	41,348.22	17,493,149.38	3,184,853.62
SOUTH DAKOTA	8,653,287.00	45,600.00	7,449,320.96	1,203,966.04
TENNESSEE	64,628,784.00	37,320.00CR	64,591,464.00	37,320.00
TEXAS	76,511,903.00	4,601,145.00	55,955,215.86	20,556,687.14
UTAH	4,534,511.00		4,530,295.82	4,215.18
VERMONT	12,957,425.00	1,539,205.80	11,687,004.33	1,270,420.67
VIRGINIA	40,856,908.00	56,520.09	40,851,267.43	5,640.57
WASHINGTON	41,018,760.00	626,557.56	28,563,374.35	12,455,385.65
WEST VIRGINIA	33,820,276.00	756,628.00	33,810,226.00	10,050.00
WISCONSIN	41,284,299.00	1,713,904.39	32,569,585.59	8,715,713.41
WYOMING	4,534,511.00	603,073.00	4,534,511.00	
DIST. OF COL.	25,751,903.00	23,994.84	17,215,085.13	8,536,817.87
PUERTO RICO	10,267,439.00	26,135.15	4,081,359.80	6,186,079.20
TOTAL	1,831,197,346.90	93,969,360.75	1,621,969,652.98	209,227,693.92

TABLE 1D

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

STATUS OF FUNDS PROVIDED FOR
BRIDGE REPLACEMENT DISCRETIONARY FUNDS - 119

AS OF DECEMBER 31, 1986

STATE	TOTAL AVAILABLE	OBLIGATIONS DURING FY 87	OBLIGATIONS TOTAL TO DATE	UNOBLIGATED BALANCE
ALABAMA	81,835,759.00		81,835,759.00	
ALASKA	20,369,305.26		20,369,305.26	
ARIZONA				
ARKANSAS				
CALIFORNIA	97,566,779.46		97,566,779.46	
COLORADO	50,298,932.39		50,298,932.39	
CONNECTICUT				
DELAWARE	15,171,082.10		15,171,082.10	
FLORIDA	8,928,432.00		8,928,432.00	
GEORGIA	29,480,000.00		29,480,000.00	
HAWAII				
IDAHO	26,399,943.00		26,399,943.00	
ILLINOIS	120,387,923.28	16,029.37CR	120,371,893.91	16,029.37
INDIANA				
IOWA	48,205,024.29	82,370.00	48,191,394.29	13,630.00
KANSAS	31,247,884.72		31,247,884.72	
KENTUCKY				
LOUISIANA	6,532,576.00		6,532,576.00	
MAINE	8,600,000.00		8,600,000.00	
MARYLAND	28,633,000.00		28,633,000.00	
MASSACHUSETTS	60,000.00		60,000.00	
MICHIGAN	32,606,120.00		32,606,120.00	
MINNESOTA	29,326,342.72	115,750.53CR	29,210,592.19	115,750.53
MISSISSIPPI	56,653,279.00		56,653,279.00	
MISSOURI	63,430,434.35	3,480.59CR	63,430,434.35	
MONTANA	2,736,000.00		2,736,000.00	
NEBRASKA	10,866,485.96		10,866,485.96	
NEVADA				
NEW HAMPSHIRE	7,300,000.00		7,300,000.00	
NEW JERSEY	26,988,096.00		26,988,096.00	
NEW MEXICO				
NEW YORK	221,880,671.00		221,880,671.00	
NORTH CAROLINA	8,993,012.00		8,993,012.00	
NORTH DAKOTA	12,800,000.00		12,800,000.00	
OHIO	41,749,395.00		40,017,970.00	1,731,425.00
OKLAHOMA				
OREGON	16,694,197.00		16,694,197.00	
PENNSYLVANIA	118,420,749.00		118,420,723.00	26.00
RHODE ISLAND	43,818,000.00		43,818,000.00	
SOUTH CAROLINA	45,490,571.39		45,490,571.39	
SOUTH DAKOTA				
TENNESSEE	35,282,632.00		35,282,632.00	
TEXAS	8,400,000.00		8,400,000.00	
UTAH				
VERMONT	10,256,110.00		10,256,110.00	
VIRGINIA	41,727,764.22		41,727,764.22	
WASHINGTON	72,714,126.50		72,714,126.50	
WEST VIRGINIA	43,062,000.00		43,062,000.00	
WISCONSIN	54,348,509.79	29,141.00	54,233,181.09	115,328.70
WYOMING				
DIST. OF COL.	15,860,000.00		15,860,000.00	
PUERTO RICO				
SUBTOTAL	1,595,121,137.43	23,749.49CR	1,593,128,947.83	1,992,189.60
UNALLOCATED	4,878,862.57			
TOTAL	1,600,000,000.00			

TABLE 1E

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

STATUS OF FUNDS PROVIDED FOR
ACCELERATION OF BRIDGE PROJECTS - 116

AS OF DECEMBER 31, 1986

STATE	TOTAL AVAILABLE	OBLIGATIONS DURING FY 87	OBLIGATIONS TOTAL TO DATE	UNOBLIGATED BALANCE
ALABAMA				
ALASKA				
ARIZONA				
ARKANSAS				
CALIFORNIA				
COLORADO				
CONNECTICUT				
DELAWARE				
FLORIDA				
GEORGIA				
HAWAII				
IDAHO				
ILLINOIS				
INDIANA				
IOWA				
KANSAS				
KENTUCKY	49,955,890.76		49,775,890.76	180,000.00
LOUISIANA				
MAINE				
MARYLAND				
MASSACHUSETTS				
MICHIGAN				
MINNESOTA				
MISSISSIPPI				
MISSOURI				
MONTANA				
NEBRASKA				
NEVADA				
NEW HAMPSHIRE				
NEW JERSEY				
NEW MEXICO				
NEW YORK				
NORTH CAROLINA				
NORTH DAKOTA				
OHIO				
OKLAHOMA				
OREGON				
PENNSYLVANIA				
RHODE ISLAND				
SOUTH CAROLINA				
SOUTH DAKOTA				
TENNESSEE				
TEXAS				
UTAH				
VERMONT				
VIRGINIA				
WASHINGTON				
WEST VIRGINIA	45,334,115.00		38,330,579.00	7,003,536.00
WISCONSIN				
WYOMING				
DIST. OF COL.				
PUERTO RICO				
SUBTOTAL	95,290,005.76		88,106,469.76	7,183,536.00
UNALLOCATED	71,535,994.24			
TOTAL	166,826,000.00			

TABLE 2A

STATUS OF BRIDGES APPROVED FOR THE BRIDGE PROGRAMS
MANDATORY 65 PERCENT ON-SYSTEM - 118
AS OF DECEMBER 31, 1966

	BRIDGES BEING PREPARED FOR CONSTRUCTION	BRIDGES UNDER CONSTRUCTION	BRIDGES COMPLETE	TOTAL
ALABAMA	349	54	170	573
ALASKA	0	1	10	11
ARIZONA	3	4	10	17
ARKANSAS	17	131	159	307
CALIFORNIA	129	85	133	347
COLORADO	51	29	80	160
CONNECTICUT	19	49	25	93
DELAWARE	6	2	6	14
DIST. OF COL.	10	6	4	20
FLORIDA	46	31	48	125
GEORGIA	224	160	181	565
HAWAII	14	0	5	19
IDAHO	43	11	43	97
ILLINOIS	65	106	505	676
INDIANA	34	30	120	184
IOWA	151	101	357	609
KANSAS	166	73	222	461
KENTUCKY	79	102	158	339
LOUISIANA	80	39	168	287
MAINE	26	9	29	64
MARYLAND	12	43	46	101
MASSACHUSETTS	25	34	32	91
MICHIGAN	14	25	134	173
MINNESOTA	21	45	184	250
MISSISSIPPI	29	57	170	256
MISSOURI	148	81	184	413
MONTANA	68	20	23	109
NEBRASKA	74	75	257	406
NEVADA	9	11	13	33
NEW HAMPSHIRE	32	7	32	71
NEW JERSEY	122	26	26	174
NEW MEXICO	5	8	31	44
NEW YORK	267	134	226	627
NORTH CAROLINA	221	73	91	385
NORTH DAKOTA	6	29	98	133
OHIO	61	99	271	431
OKLAHOMA	28	31	45	104
OREGON	86	17	88	191
PENNSYLVANIA	163	91	102	356
RHODE ISLAND	14	6	5	25
SOUTH CAROLINA	40	21	59	120
SOUTH DAKOTA	23	55	66	144
TENNESSEE	111	144	381	636
TEXAS	33	32	252	317
UTAH	19	4	29	52
VERMONT	70	6	50	126
VIRGINIA	27	13	107	147
WASHINGTON	43	16	80	139
WEST VIRGINIA	91	40	42	173
WISCONSIN	215	27	257	499
WYOMING	1	14	31	46
PUERTO RICO	3	3	6	12
TOTAL	3591	2310	5851	11752

TABLE 2B

STATUS OF BRIDGES APPROVED FOR THE BRIDGE PROGRAMS
MANDATORY 15 PERCENT OFF-SYSTEM - 117
AS OF DECEMBER 31, 1986

	BRIDGES BEING PREPARED FOR CONSTRUCTION	BRIDGES UNDER CONSTRUCTION	BRIDGES COMPLETE	TOTAL
ALABAMA	9	92	269	370
ALASKA	0	1	2	3
ARIZONA	1	4	19	24
ARKANSAS	5	28	85	118
CALIFORNIA	59	28	63	150
COLORADO	17	6	18	41
CONNECTICUT	7	4	8	19
DELAWARE	5	9	9	23
DIST. OF COL.	0	0	0	0
FLORIDA	45	35	32	112
GEORGIA	105	72	149	326
HAWAII	5	1	3	9
IDAHO	19	5	26	50
ILLINOIS	59	58	619	736
INDIANA	79	18	66	163
IOWA	0	63	268	331
KANSAS	4	58	175	237
KENTUCKY	24	58	66	148
LOUISIANA	72	46	238	356
MAINE	7	8	34	49
MARYLAND	16	13	33	62
MASSACHUSETTS	3	11	4	18
MICHIGAN	5	15	80	100
MINNESOTA	11	28	249	288
MISSISSIPPI	12	18	124	154
MISSOURI	221	99	102	422
MONTANA	30	13	23	66
NEBRASKA	95	60	105	260
NEVADA	5	2	9	16
NEW HAMPSHIRE	20	2	17	39
NEW JERSEY	73	9	4	86
NEW MEXICO	4	3	16	23
NEW YORK	161	35	97	293
NORTH CAROLINA	97	34	90	221
NORTH DAKOTA	0	11	58	69
OHIO	7	46	135	188
OKLAHOMA	8	57	13	78
OREGON	72	7	55	134
PENNSYLVANIA	75	67	69	211
RHODE ISLAND	7	0	8	15
SOUTH CAROLINA	28	23	40	91
SOUTH DAKOTA	1	23	43	67
TENNESSEE	109	87	74	270
TEXAS	53	44	179	276
UTAH	10	3	18	31
VERMONT	33	2	57	92
VIRGINIA	6	24	100	130
WASHINGTON	81	18	104	203
WEST VIRGINIA	41	26	25	92
WISCONSIN	202	21	191	414
WYOMING	15	0	13	28
PUERTO RICO	4	0	3	7
TOTAL	2027	1395	4287	7709

TABLE 2C

STATUS OF BRIDGES APPROVED FOR THE BRIDGE PROGRAMS
OPTIONAL 20 PERCENT ON/OFF-SYSTEM - 114
AS OF DECEMBER 31, 1986

	BRIDGES BEING PREPARED FOR CONSTRUCTION	BRIDGES UNDER CONSTRUCTION	BRIDGES COMPLETE	TOTAL
ALABAMA	82	21	115	218
ALASKA	8	0	3	11
ARIZONA	1	3	11	15
ARKANSAS	14	42	58	114
CALIFORNIA	53	45	39	137
COLORADO	31	3	10	44
CONNECTICUT	7	5	1	13
DELAWARE	1	3	0	4
DIST. OF COL.	9	1	3	13
FLORIDA	22	18	9	49
GEORGIA	34	68	63	165
HAWAII	2	0	0	2
IDAHO	11	2	20	33
ILLINOIS	16	42	314	372
INDIANA	30	16	27	73
IOWA	2	85	359	446
KANSAS	14	44	149	207
KENTUCKY	35	57	88	180
LOUISIANA	113	73	99	285
MAINE	9	8	23	40
MARYLAND	3	9	5	17
MASSACHUSETTS	4	11	4	19
MICHIGAN	7	23	95	125
MINNESOTA	15	12	109	136
MISSISSIPPI	17	34	104	155
MISSOURI	25	17	44	86
MONTANA	28	14	18	60
NEBRASKA	4	33	75	112
NEVADA	4	4	3	11
NEW HAMPSHIRE	14	12	22	48
NEW JERSEY	21	4	2	27
NEW MEXICO	1	1	7	9
NEW YORK	35	32	69	136
NORTH CAROLINA	109	47	44	200
NORTH DAKOTA	0	15	58	73
OHIO	10	4	70	84
OKLAHOMA	1	12	14	27
OREGON	21	11	44	76
PENNSYLVANIA	11	12	20	43
RHODE ISLAND	10	2	0	12
SOUTH CAROLINA	3	8	58	69
SOUTH DAKOTA	2	30	32	64
TENNESSEE	24	15	215	254
TEXAS	14	31	52	97
UTAH	2	2	14	18
VERMONT	33	1	31	65
VIRGINIA	21	3	58	82
WASHINGTON	13	15	14	42
WEST VIRGINIA	16	9	14	39
WISCONSIN	112	31	180	323
WYOMING	7	4	10	21
PUERTO RICO	2	0	3	5
TOTAL	1083	994	2879	4956

TABLE 3

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM
DISCRETIONARY FUNDING STATUS REPORT
As Of December 31, 1986

STATE	BRIDGE	Allocations Approved (IN MILLIONS) FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
Alabama	Cochrane	$ 0.608	$ 1.200	$ 1.520			$ 6.735	$ 30.102	$ 34.080
	Claiborne-Murphy				$ 0.640	$ 6.951			
Alaska	Gastineau and Kowee Creek	20.369							
California	Golden Gate	1.000	2.549	15.300	26.012	10.200			4.560
	San Mateo		0.720	4.000	1.649				
	Russian River at Preston					0.520	0.200	1.957	18.800
	Mission Bay Channel							10.100	
Colorado	Colfax-Larimer Viaduct				6.080	13.628	13.290	17.301	
Delaware	Augustine Cutoff		6.007						
	US 113 over St. Jones River				9.164				
Dist. of Col.	Key Bridge				0.500	1.360		14.000	
Florida	Barron Collier		8.928						
Georgia	Torras Causeway		1.600		19.400				
	13th Street								8.480

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TABLE 3 (cont.)

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM
DISCRETIONARY FUNDING STATUS REPORT
As Of December 31, 1986

STATE	BRIDGE	Allocations Approved (IN MILLIONS) FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
Idaho	Sandpoint	$ 9.600							
	Bonners Ferry				$ 8.173			$ 0.527	
	Old Town								$ 8.100
Illinois	Miss. Rv. @ Quincy	0.400	$ 0.800	$ 1.360	7.100	$ 26.200		0.508	
	US 36 @ Florence	0.804						2.500	21.358
	Pekin	11.400		3.100					
	Franklin St. Bridge					1.280			0.770
	LaSalle-Peru Bridge					10.380	$ 27.656		
	Staley Viaduct						1.200		0.960
Iowa/Wisc.	Eagle Point	5.600	23.535						
Iowa/Ill.	Keokuk	0.360	0.440	7.856		10.193		2.687	0.075
Iowa/ Nebraska	Missouri River @ Sioux City	2.723	0.397						
Iowa	MacArthur Bridge					0.500		0.047	1.086
Kansas/Mo.	US 36/Mo. River	8.002	5.626	1.958	1.813				
Kansas	West Kansas Avenue					6.250	12.036		

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TABLE 3 (cont.)

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM
DISCRETIONARY FUNDING STATUS REPORT
As Of December 31, 1986

STATE	BRIDGE	Allocations Approved (IN MILLIONS) FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
Maine	Million Dollar	$ 0.400		$ 0.400				$ 0.160	$ 1.200
	Wiscasset-Edgecomb		$ 2.500	3.700		$ 0.240			
Maryland	South River		17.433						
	US 50-301/Severn								11.200
Massachusetts	Fore River	0.060							
Michigan	Third Street		1.824		$ 0.151		$ 19.911		
	MacArthur Bridge				10.720				
Minnesota	High Bridge						1.724	1.563	14.799
Mississippi	Natchez-Vidalia	1.680		8.000			13.157	22.400	3.481
	Escatawpa River						5.948		
	Fort Bayou Bridge					8.320	0.200		
Missouri	US 67	15.684	2.391						0.610
	US 54/Grand Glaize				6.185	0.794			
	ASB		8.620	0.478	3.261	10.177	5.500	3.300	0.348
Montana	Warden					2.736			
Nebraska/Iowa	Nebraska City				0.565	8.015	1.355	1.040	0.830
New Hampshire	Notre Dame Bridge								7.300

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TABLE 3 (cont.)

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM
DISCRETIONARY FUNDING STATUS REPORT
As Of December 31, 1986

STATE	BRIDGE	Allocations Approved (IN MILLIONS) FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
New Jersey	Rte. 22WB/Waverly Yards				$ 0.480	$ 11.200			
	Pulaski Skyway						$ 15.200	$ 0.108	
New York	South Park Avenue	$ 7.671							
	Queensboro	1.335		$ 18.588	28.125	8.800	0.496	37.664	$ 7.080
	Manhattan	2.152			5.464	0.736	27.832	2.800	0.720
	Little Falls	3.050							
	Brooklyn					5.438	3.100		50.574
New York/VT	Rouses Point			0.400	1.016			19.096	
North Carolina	US 421/Cape Fear				8.993				
North Dakota	Bismarck Memorial			1.850	10.950				
Ohio	Northfield Road Br.					5.490			
	North Main Street Viaduct	18.400	$ 5.734						
	Main Ave. Bridge						3.615		
	Hopple St. Viaduct							7.127	
Oregon	Center Street	0.720	0.320	15.400	0.254				
Pennsylvania	Bloomfield	2.880	6.640	8.640		1.840	5.800		

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TABLE 3 (cont.)

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM
DISCRETIONARY FUNDING STATUS REPORT
As Of December 31, 1986

STATE	BRIDGE	Allocations Approved (IN MILLIONS) FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
Pennsylvania (cont.)	Rochester-Monaca				$ 2.400			$ 14.000	
	Passyunk Avenue	$ 30.000							
	Minsi Trail				8.880		$ 4.000		
	Beaver Falls		$ 0.800	$ 9.795					
	Monongahela River					$ 0.400	0.900	12.800	
	Towanda					1.000	7.645		
Rhode Island	Jamestown	0.080	2.938		0.400	0.400	40.000		
South Carolina	Hilton Head, Skull & Mackey Creek	2.500	12.591						
	Sampit River		1.000	11.040					$ 0.200
	James Island			4.400	1.760				12.000
Tennessee	Sidney Lewis Bridge					11.400			
	Walnut Street				14.028				
	Alvin York Bridge						0.575	9.280	
Texas	Brazos Rv. Div Channel		8.400						
Virginia	James River	8.300	16.000	0.075					
	Nansemond River	3.353							

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TABLE 3 (cont.)

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION PROGRAM
DISCRETIONARY FUNDING STATUS REPORT
As Of December 31, 1986

STATE	BRIDGE	Allocations Approved (IN MILLIONS) FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986
Virginia (cont.)	Robert E. Lee Bridge					$ 2.000			
	Williams Viaduct								$ 12.000
Washington	Swinomish Channel	$ 8.190	$ 2.087	$ 0.708					
	Pasco-Kennewick	1.729							
	West Seattle			60.000					
West Virgina/ Ohio	Weirton/ Steubenville				$ 8.000	18.062	$ 16.500		0.500
Wisconsin/ Minnesota	Arrowhead	13.320	31.820	7.868	1.638	2.300	0.492		
Wisconsin/ Minnesota	Wabasha Bridge								3.520
	TOTAL	$182.370	$172.900	$186.436	$193.801	$186.810	$235.067	$211.067	$224.631

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TABLE 4A

COUNT OF DEFICIENT BRIDGES BY STATE
ON FEDERAL-AID SYSTEM
AS OF DECEMBER 31, 1986

	BRIDGES IN INVENTORY	NON-DEFICIENT BRIDGES	STRUCTURALLY DEFICIENT	FUNCTIONALLY OBSOLETE	DEFICIENT BRIDGES
ALABAMA	7,621	4,787	1,041	1,793	2,834
ALASKA	566	534	27	5	32
ARIZONA	4,439	4,199	70	170	240
ARKANSAS	5,857	3,836	348	1,673	2,021
CALIFORNIA	14,792	12,621	499	1,672	2,171
COLORADO	3,495	2,927	418	150	568
CONNECTICUT	2,613	944	579	1,090	1,669
DELAWARE	469	404	51	14	65
DIST. OF COL.	215	168	44	3	47
FLORIDA	5,977	4,975	124	878	1,002
GEORGIA	7,975	4,977	924	2,074	2,998
HAWAII	669	521	83	65	148
IDAHO	1,669	1,444	157	68	225
ILLINOIS	10,523	8,417	1,616	490	2,106
INDIANA	7,158	4,511	867	1,780	2,647
IOWA	7,188	5,137	825	1,226	2,051
KANSAS	10,700	7,286	889	2,525	3,414
KENTUCKY	4,914	2,413	244	2,257	2,501
LOUISIANA	5,669	3,989	848	832	1,680
MAINE	1,249	1,037	140	72	212
MARYLAND	2,491	1,697	402	392	794
MASSACHUSETTS	3,663	2,637	977	49	1,026
MICHIGAN	5,849	4,927	672	250	922
MINNESOTA	5,091	4,226	505	360	865
MISSISSIPPI	7,542	4,267	1,646	1,629	3,275
MISSOURI	8,699	5,261	1,880	1,558	3,438
MONTANA	2,429	1,084	110	1,235	1,345
NEBRASKA	5,101	3,566	614	921	1,535
NEVADA	790	694	10	86	96
NEW HAMPSHIRE	1,230	916	177	137	314
NEW JERSEY	4,153	2,864	839	450	1,289
NEW MEXICO	2,850	2,463	251	136	387
NEW YORK	8,809	3,634	4,562	613	5,175
NORTH CAROLINA	5,479	3,610	347	1,522	1,869
NORTH DAKOTA	1,687	1,218	159	310	469
OHIO	12,150	10,043	1,951	156	2,107
OKLAHOMA	8,046	5,191	1,038	1,817	2,855
OREGON	3,737	3,246	295	196	491
PENNSYLVANIA	10,910	7,653	2,487	770	3,257
RHODE ISLAND	563	466	75	22	97
SOUTH CAROLINA	4,217	3,421	225	571	796
SOUTH DAKOTA	2,758	2,279	248	231	479
TENNESSEE	7,404	4,526	1,227	1,651	2,878
TEXAS	25,821	21,002	1,360	3,459	4,819
UTAH	1,496	1,411	54	31	85
VERMONT	1,291	861	168	262	430
VIRGINIA	6,856	5,449	645	762	1,407
WASHINGTON	3,949	2,800	473	676	1,149
WEST VIRGINIA	3,396	1,754	1,169	473	1,642
WISCONSIN	6,293	3,840	1,836	617	2,453
WYOMING	1,908	1,764	39	105	144
PUERTO RICO	884	540	86	258	344
TOTAL	271,300	194,437	36,321	40,542	76,863

TABLE 4B

COUNT OF DEFICIENT BRIDGES BY STATE
OFF FEDERAL-AID SYSTEM
AS OF DECEMBER 31, 1986

	BRIDGES IN INVENTORY	NON-DEFICIENT BRIDGES	STRUCTURALLY DEFICIENT	FUNCTIONALLY OBSOLETE	DEFICIENT BRIDGES
ALABAMA	7,741	3,244	2,989	1,508	4,497
ALASKA	236	178	45	13	58
ARIZONA	825	685	82	58	140
ARKANSAS	7,096	2,899	1,127	3,070	4,197
CALIFORNIA	7,478	3,851	1,170	2,457	3,627
COLORADO	3,767	1,701	1,779	287	2,066
CONNECTICUT	1,145	439	343	363	706
DELAWARE	262	187	43	32	75
DIST. OF COL.	21	21	0	0	0
FLORIDA	4,071	2,729	617	725	1,342
GEORGIA	6,311	3,073	2,786	452	3,238
HAWAII	368	233	37	98	135
IDAHO	2,047	1,185	464	398	862
ILLINOIS	14,719	9,011	3,883	1,825	5,708
INDIANA	10,445	4,071	3,469	2,905	6,374
IOWA	18,822	8,054	5,395	5,373	10,768
KANSAS	15,019	5,004	4,837	5,178	10,015
KENTUCKY	7,616	2,338	1,262	4,016	5,278
LOUISIANA	8,350	3,529	3,213	1,608	4,821
MAINE	1,341	766	286	289	575
MARYLAND	1,844	1,089	244	511	755
MASSACHUSETTS	1,208	546	631	31	662
MICHIGAN	4,729	2,578	1,739	412	2,151
MINNESOTA	7,879	4,952	1,375	1,552	2,927
MISSISSIPPI	9,480	3,545	5,095	840	5,935
MISSOURI	14,936	3,407	4,787	6,742	11,529
MONTANA	2,306	799	452	1,055	1,507
NEBRASKA	10,913	2,967	5,172	2,774	7,946
NEVADA	252	180	31	41	72
NEW HAMPSHIRE	1,329	462	388	479	867
NEW JERSEY	1,710	934	484	292	776
NEW MEXICO	597	371	134	92	226
NEW YORK	8,578	2,027	5,681	870	6,551
NORTH CAROLINA	10,579	3,324	2,252	5,003	7,255
NORTH DAKOTA	3,667	1,301	1,862	504	2,366
OHIO	16,824	12,768	2,636	1,420	4,056
OKLAHOMA	14,887	4,884	7,406	2,597	10,003
OREGON	2,838	2,119	330	389	719
PENNSYLVANIA	11,410	6,745	3,193	1,472	4,665
RHODE ISLAND	135	82	34	19	53
SOUTH CAROLINA	4,681	3,645	708	328	1,036
SOUTH DAKOTA	4,294	1,359	1,563	1,372	2,935
TENNESSEE	10,948	5,369	4,083	1,496	5,579
TEXAS	18,159	7,528	5,358	5,273	10,631
UTAH	967	692	194	81	275
VERMONT	1,368	642	272	454	726
VIRGINIA	5,707	3,036	620	2,051	2,671
WASHINGTON	2,838	2,132	287	419	706
WEST VIRGINIA	3,252	932	1,675	645	2,320
WISCONSIN	6,593	3,105	2,369	1,119	3,488
WYOMING	924	369	283	272	555
PUERTO RICO	795	437	76	282	358
TOTAL	304,307	137,524	95,241	71,542	166,783

TABLE 5A

COUNT OF OPEN, CLOSED AND POSTED BRIDGES
ON FEDERAL-AID SYSTEM
AS OF DECEMBER 31, 1986

	BRIDGES IN INVENTORY	OPEN - NOT REQUIRING LOAD POSTING	CLOSED BRIDGES	POSTED BRIDGES	OPEN - SHOULD BE POSTED BUT ARE NOT POSTED
ALABAMA	7,621	5,099	10	178	2,334
ALASKA	566	524	0	38	4
ARIZONA	4,439	4,409	4	26	0
ARKANSAS	5,857	5,001	17	582	257
CALIFORNIA	14,792	14,698	13	75	6
COLORADO	3,495	3,390	4	93	8
CONNECTICUT	2,613	2,486	9	116	2
DELAWARE	469	439	7	18	5
DIST. OF COL.	215	164	2	48	1
FLORIDA	5,977	5,542	5	365	65
GEORGIA	7,975	7,297	10	628	40
HAWAII	669	636	0	32	1
IDAHO	1,669	1,473	0	196	0
ILLINOIS	10,523	9,971	3	294	255
INDIANA	7,158	6,360	23	409	366
IOWA	7,188	6,478	15	667	28
KANSAS	10,700	7,946	21	2,680	53
KENTUCKY	4,914	4,564	6	265	79
LOUISIANA	5,669	5,035	1	535	98
MAINE	1,249	1,220	1	22	6
MARYLAND	2,491	2,330	1	49	111
MASSACHUSETTS	3,663	3,110	47	475	31
MICHIGAN	5,849	5,204	184	436	25
MINNESOTA	5,091	4,893	4	173	21
MISSISSIPPI	7,542	4,674	40	2,664	164
MISSOURI	8,699	6,362	3	2,297	37
MONTANA	2,429	2,328	0	54	47
NEBRASKA	5,101	4,196	8	884	13
NEVADA	790	781	5	4	0
NEW HAMPSHIRE	1,230	1,170	2	25	33
NEW JERSEY	4,153	3,730	16	386	21
NEW MEXICO	2,850	2,813	0	37	0
NEW YORK	8,809	8,631	12	166	0
NORTH CAROLINA	5,479	4,613	5	851	10
NORTH DAKOTA	1,687	1,486	0	121	80
OHIO	12,150	11,398	32	538	182
OKLAHOMA	8,046	7,289	6	275	476
OREGON	3,737	3,606	5	104	22
PENNSYLVANIA	10,910	9,864	26	483	537
RHODE ISLAND	563	537	2	22	2
SOUTH CAROLINA	4,217	4,117	5	95	0
SOUTH DAKOTA	2,758	2,401	3	349	5
TENNESSEE	7,404	7,181	3	161	59
TEXAS	25,821	25,067	2	457	295
UTAH	1,496	1,423	3	26	44
VERMONT	1,291	1,251	0	40	0
VIRGINIA	6,856	6,328	8	517	3
WASHINGTON	3,949	3,881	2	66	0
WEST VIRGINIA	3,396	2,957	10	425	4
WISCONSIN	6,293	6,218	8	54	13
WYOMING	1,908	1,877	0	26	5
PUERTO RICO	884	862	2	19	1
TOTAL	271,300	245,310	595	19,546	5,849

TABLE 5B

COUNT OF OPEN, CLOSED AND POSTED BRIDGES
OFF FEDERAL-AID SYSTEM
AS OF DECEMBER 31, 1986

	BRIDGES IN INVENTORY	OPEN - NOT REQUIRING LOAD POSTING	CLOSED BRIDGES	POSTED BRIDGES	OPEN - SHOULD BE POSTED BUT ARE NOT POSTED
ALABAMA	7,741	2,824	8	864	4,045
ALASKA	236	133	4	75	24
ARIZONA	825	710	21	91	3
ARKANSAS	7,096	3,136	31	720	3,209
CALIFORNIA	7,478	6,757	34	638	49
COLORADO	3,767	1,921	24	1,568	254
CONNECTICUT	1,145	930	20	190	5
DELAWARE	262	206	4	47	5
DIST. OF COL.	21	13	0	8	0
FLORIDA	4,071	2,373	46	1,391	261
GEORGIA	6,311	3,102	169	2,847	193
HAWAII	368	282	0	77	9
IDAHO	2,047	1,366	5	667	9
ILLINOIS	14,719	10,338	171	2,788	1,422
INDIANA	10,445	4,323	123	2,963	3,036
IOWA	18,822	9,821	225	8,574	202
KANSAS	15,019	6,081	252	8,627	59
KENTUCKY	7,616	4,729	61	973	1,853
LOUISIANA	8,350	3,657	56	1,668	2,969
MAINE	1,341	1,047	10	110	174
MARYLAND	1,844	1,174	11	242	417
MASSACHUSETTS	1,208	670	72	437	29
MICHIGAN	4,729	2,608	340	1,757	24
MINNESOTA	7,879	6,285	75	1,458	61
MISSISSIPPI	9,480	3,537	365	5,169	409
MISSOURI	14,936	11,725	140	3,000	71
MONTANA	2,306	1,139	7	671	489
NEBRASKA	10,913	2,699	127	7,904	183
NEVADA	252	230	4	17	1
NEW HAMPSHIRE	1,329	587	17	314	411
NEW JERSEY	1,710	1,061	43	590	16
NEW MEXICO	597	447	14	136	0
NEW YORK	8,578	6,923	65	1,590	0
NORTH CAROLINA	10,579	3,942	29	6,584	24
NORTH DAKOTA	3,667	1,576	1	1,726	364
OHIO	16,824	10,111	123	5,558	1,032
OKLAHOMA	14,887	10,761	140	3,847	139
OREGON	2,838	2,400	8	373	57
PENNSYLVANIA	11,410	7,085	188	3,095	1,042
RHODE ISLAND	135	102	5	27	1
SOUTH CAROLINA	4,681	3,916	29	736	0
SOUTH DAKOTA	4,294	1,820	79	2,356	39
TENNESSEE	10,948	7,991	109	2,131	717
TEXAS	18,159	9,199	92	2,135	6,733
UTAH	967	617	24	178	148
VERMONT	1,368	1,200	12	156	0
VIRGINIA	5,707	3,413	11	2,283	0
WASHINGTON	2,838	2,509	29	297	3
WEST VIRGINIA	3,252	1,772	58	1,403	19
WISCONSIN	6,593	5,466	27	1,087	13
WYOMING	924	391	15	204	314
PUERTO RICO	795	776	7	12	0
TOTAL	304,307	177,881	3,530	92,359	30,537

APPENDIX A

CODE OF FEDERAL REGULATIONS

23 HIGHWAYS - PART 650

Subpart D—Highway Bridge Replacement and Rehabilitation Program

§ 650.401 Purpose.

The purpose of this regulation is to prescribe policies and outline procedures for administering the Highway Bridge Replacement and Rehabilitation Program in accordance with 23 U.S.C. 144.

§ 650.403 Definitions of terms.

(a) *Bridge.* A structure, including supports, erected over a depression or an obstruction, such as water, a highway, or a railway, having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercoping of abutments or spring lines of arches, or extreme ends of the openings for multiple boxes; it may include multiple pipes where the clear distance between openings is less than half of the smaller contiguous opening.

(b) *Sufficiency rating.* The numerical rating of a bridge based on its structural adequacy and safety, essentiality for public use, and its serviceability and functional obsolescence.

(c) *Rehabilitation.* The major work required to restore the structural integrity of a bridge as well as work necessary to correct major safety defects.

§ 650.405 Eligible projects.

(a) *General.* Deficient highway bridges on all public roads may be eligible for replacement or rehabilitation.

(b) *Types of projects which are eligible.* The following types of work are eligible for participation in the Highway Bridge Replacement and Rehabilitation Program (HBRRP), hereinafter known as the bridge program.

(1) *Replacement.* Total replacement of a structurally deficient or functionally obsolete bridge with a new facility constructed in the same general traffic corridor. A nominal amount of approach work, sufficient to connect the new facility to the existing roadway or to return the gradeline to an attainable touchdown point in accordance with good design practice is also eligible. The replacement structure must meet the current geometric, construction and structural standards required for the types and volume of projected traffic on the facility over its design life.

(2) *Rehabilitation.* The project requirements necessary to perform the major work required to restore the structural integrity of a bridge as well as work necessary to correct major safety defects are eligible except as noted under ineligible work. Bridges to be rehabilitated both on or off the F-A System shall, as a minimum, conform with the provisions of 23 CFR Part 625, Design Standards for Federal-aid Highways, for the class of highway on which the bridge is a part.

(c) *Ineligible work.* Except as otherwise prescribed by the Administrator, the costs of long approach fills, causeways, connecting roadways, interchanges, ramps, and other extensive earth structures, when constructed beyond the attainable touchdown point, are not eligible under the bridge program.

§ 650.407 Application for bridge replacement or rehabilitation.

(a) Agencies participate in the bridge program by conducting bridge inspections and submitting Structure Inventory and Appraisal (SI&A) sheet inspection data. Federal and local governments supply SI&A sheet data to the State agency for review and processing. The State is responsible for submitting the six computer card format or tapes containing all public road SI&A sheet bridge information through the Division Administrator of the Federal Highway Administration (FHWA) for processing. These requirements are prescribed in 23 CFR 650.309 and 650.311, the National Bridge Inspection Standards.

(b) Inventory data may be submitted as available and shall be submitted at such additional times as the FHWA may request.

(c) Inventory data on bridges that have been strengthened or repaired to eliminate deficiencies, or those that have been replaced or rehabilitated using bridge replacement and/or other funds, must be revised in the inventory through data submission.

(d) The Secretary may, at the request of a State, inventory bridges, on and off the Federal-aid system, for historic significance.

§ 650.409 Evaluation of bridge inventory.

(a) *Sufficiency rating of bridges.* Upon receipt and evaluation of the bridge inventory, a sufficiency rating will be assigned to each bridge by the Secretary in accordance with the approved AASHTO [1] sufficiency rating formula. The sufficiency rating will be used as a basis for establishing eligibility and priority for replacement or rehabilitation of bridges; in general the lower the rating, the higher the priority.

(b) *Selection of bridges for inclusion in State program.* After evaluation of the inventory and assignment of sufficiency ratings, the Secretary will provide the State with a selection list of bridges within the State that are eligible for the bridge program. From that list or from previously furnished selection lists, the State may select bridge projects.

§ 650.411 Procedures for bridge replacement and rehabilitation projects.

(a) Consideration shall be given to projects which will remove from service highway bridges most in danger of failure.

(b) *Submission and approval of projects.* (1) Bridge replacement or rehabilitation projects shall be submitted by the State to the Secretary in accordance with 23 CFR Part 630 Subpart A Federal-Aid Programs, Approval and Authorization.

(2) Funds apportioned to a State shall be made available throughout each State on a fair and equitable basis.

(c)(1) Each approved project will be designed, constructed, and inspected for acceptance in the same manner as other projects on the system on which the project is located. It shall be the responsibility of the State agency to properly maintain, or cause to be properly maintained, any project constructed under this bridge program. The State highway agency shall enter into a formal agreement for maintenance with appropriate local government officials in cases where an eligible project is located within and is under the legal authority of such a local government.

(2) Whenever a deficient bridge is replaced or its deficiency alleviated by a new bridge under the bridge program, the deficient bridge shall either be dismantled or demolished or its use limited to the type and volume of traffic the structure can safely service over its remaining life. For example, if the only deficiency of the existing structure is inadequate roadway width and the combination of the new and existing structure can be made to meet current standards for the volume of traffic the facility will carry over its design life, the existing bridge may remain in place and be incorporporated into the system.

§ 650.413 Funding.

(a) Funds authorized for carrying out the Highway Bridge Replacement and Rehabilitation Program are available for obligation at the beginning of the fiscal year for which authorized and remain available for expenditure for the same period as funds apportioned for projects on the Federal-aid primary system.

(b) The Federal share payable on account of any project carried out under 23 U.S.C. 144 shall be 80 percent of the eligible cost.

(c) Not less than 15 percent nor more than 35 percent of the apportioned funds shall be expended for projects located on public roads, other than those on a Federal-aid system. The Secretary after consultation with State and local officials may, with respect to a State, reduce the requirement for expenditure for bridges not on a Federal-aid system when he determines that such State has inadequate needs to justify such expenditure.

§ 650.415 Reports.

The Secretary must report annually to the Congress on projects approved and current inventories together with recommendations for further improvements.

Effective Date:
December 13, 1979

APPENDIX B

CODE OF FEDERAL REGULATIONS

23 HIGHWAYS - PART 650

Subpart C—National Bridge Inspection Standards

§ 650.301 Application of standards.

The National Bridge Inspection Standards in this part apply to all structures defined as bridges located on all public roads. In acordance with the AASHTO (American Association of State Highway and Transportation Officials) Highway Definitions Manual, a "bridge" is defined as a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

§ 650.303 Inspection procedures.

(a) Each highway department shall include a bridge inspection organization capable of performing inspections, preparing reports, and determining ratings in accordance with the provisions of the AASHTO Manual [1] and the Standards contained herein.

(b) Bridge inspectors shall meet the minimum qualifications stated in § 650.307.

[1] The "AASHTO Manual" referred to in this part is the "Manual for Maintenance Inspection of Bridges 1978" published by the American Association of State Highway and Transportation Officials. A copy of the Manual may be examined during normal business hours at the office of each Division Administrator of the Federal Highway Administration, at the office of each Regional Federal Highway Administrator, and at the Washington Headquarters of the Federal Highway Administration. The addresses of these document inspection facilities are set forth in Appendix D to Part 7 of the regulations of the Office of the Secretary (49 CFR Part 7). In addition, a copy of the Manual may be secured upon payment in advance by writing to the American Association of State Highway and Transportation Officials, 444 N. Capitol Street, NW., Suite 225, Washington, D.C. 20001.

(c) Each structure required to be inspected under the Standards shall be rated as to its safe load carrying capacity in accordance with section 4 of the AASHTO Manual. If it is determined under this rating procedure that the maximum legal load under State law exceeds the load permitted under the Operating Rating, the bridge must be posted in conformity with the AASHTO Manual or in accordance with State law.

(d) Inspection records and bridge inventories shall be prepared and maintained in accordance with the Standards.

§ 650.305 Frequency of inspections.

(a) Each bridge is to be inspected at regular intervals not to exceed 2 years in accordance with section 2.3 of the AASHTO Manual.

(b) The depth and frequency to which bridges are to be inspected will depend on such factors as age, traffic characteristics, state of maintenance, and known deficiencies. The evaluation of these factors will be the responsibility of the individual in charge of the inspection program.

§ 650.307 Qualifications of personnel.

(a) The individual in charge of the organizational unit that has been delegated the responsibilities for bridge inspection, reporting, and inventory shall possess the following minimum qualifications:

(1) Be a registered professional engineer; or

(2) Be qualified for registration as a professional engineer under the laws of the State; or

(3) Have a minimum of 10 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the "Bridge Inspector's Training Manual." [2] which has been developed by a joint Federal-State task force.

(b) An individual in charge of a bridge inspection team shall possess the following minimum qualifications:

(1) Have the qualifications specified in paragraph (a) of this section; or

[2] The "Bridge Inspector's Training Manual" may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

(2) Have a minimum of 5 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the "Bridge Inspector's Training Manual," which has been developed by a joint Federal-State task force.

§ 650.309 Inspection report.

The findings and results of bridge inspections shall be recorded on standard forms. The data required to complete the forms and the functions which must be performed to compile the data are contained in section 3 of the AASHTO Manual.

§ 650.311 Inventory.

(a) Each State shall prepare and maintain an inventory of all bridge structures subject to the Standards. Under these Standards, certain structure inventory and appraisal data must be collected and retained within the various departments of the State organization for collection by the Federal Highway Administration as needed. A tabulation of this data is contained in the structure inventory and appraisal sheet distributed by the Federal Highway Administration as part of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (Coding Guide) in January of 1979. Reporting procedures have been developed by the Federal Highway Administration.

(b) All bridges subject to these Standards shall be inventoried by December 31, 1980, as required by section 124(a), and (c) of the Surface Transportation Assistance Act of 1978. Newly completed structures or any modification of existing structures which would alter previously recorded data on the inventory forms shall be entered in the State's records within 90 days.

Effective Date: May 1, 1979

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

23 CFR Part 650

Bridges, Structures, and Hydraulics; Discretionary Bridge Criteria

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Final rule.

Subpart G—Discretionary Bridge Candidate Rating Factor

Sec.

650.701 Purpose.
650.703 Eligible projections. for discretionary bridge funds.
650.705 Application for discretionary bridge funds.
650.707 Rating factor.
650.709 Special considerations.

Authority: 161, Pub. L. 97-424, 96 Stat. 2097; 23 U.S.C. 144, 315; 49 CFR 1.48(b).

Subpart G—Discretionary Bridge Candidate Rating Factor

§ 650.701 Purpose.

The purpose of this regulation is to describe a rating factor used as part of a selection process of allocation of discretionary bridge funds made available to the Secretary of Transportation under 23 U.S.C. 144.

§ 650.703 Eligible projects.

(a) Deficient highway bridges on Federal-aid highway system roads may be eligible for allocation of discretionary bridge funds to the same extent as they are for bridge funds apportioned under 23 U.S.C. 144, provided that the total project cost for a discretionary bridge candidate is at least $10 million or twice the amont of 23 U.S.C. 144 funds apportioned to the State during the fiscal year for which funding for the candidate bridge is requested.

(b) After the effective date of this regulation for the discretionary bridge candidate rating factor, only candidate bridges not previously selected with a computed rating factor of 100 or less will be eligible for consideration.

§ 650.705 Application for discretionary bridge funds.

Each year through its field offices, the FHWA will issue an annual call for discretionary bridge candidate submittals including updates of previously submitted but not selected projects. Each State is responsible for submitting such data as required for candidate bridges. Data requested will include structure number, funds needed by fiscal year, total project cost, current average daily truck traffic and a narrative describing the existing bridge, the proposed new or rehabilitated bridge and other relevant factors which the State believes may warrant special consideration.

§ 650.707 Rating factor.

(a) The following formula is to be used in the selection process for ranking discretionary bridge candidates:

$$\text{Rating Factor (RF)} = \frac{SR}{D} \times \frac{TPC}{ADT'} \times \left[1 + \frac{\text{Unobligated HBRRP Balance}}{\text{Total HBRRP Funds Received}}\right]$$

The lower the rating factor, the higher the priority for selection and funding.

(b) The terms in the rating factor are defined as follows:

SR is Sufficiency Rating computed as illustrated in Appendix A of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, USDOT/FHWA (latest edition); (If SR is less than 1.0, use SR = 1.0);

ADT is Average Daily Traffic in thousands taking the most current value from the national bridge inventory data;

ADTT is Average Daily Truck Traffic in thousands (Pick up trucks and light delivery trucks not included);

For load posted bridges, the ADTT furnished should be that which would use the bridge if traffic were not restricted.

The ADTT should be the annual average volume, not peak or seasonal.

D is Defense Highway System Status
D = 1 if not on defense highway
D = 1.3 if bridge carries a designated defense highway

The last term of the rating factor expression includes the State's unobligated balance of funds received under 23 U.S.C. 144 as of June 30 preceding the date of calculation, and the total funds received under 23 U.S.C. 144 for the last four fiscal years ending with the most recent fiscal year of the FHWA's annual call for discretionary bridge candidate submittals; (if unobligated HBRRP balance is less than $10 million, use zero balance);

TPC is Total Project Cost in millions of dollars;
HBRRP is Highway Bridge Replacement and Rehabilitation Program;
ADT' is ADT plus ADTT.

(c) In order to balance the relative importance of candidate bridges with very low (less than one) sufficiency ratings and very low ADT's against candidate bridges with high ADT's, the minimum sufficiency rating used will be 1.0. If the computed sufficiency rating for a candidate bridge is less than 1.0, use 1.0 in the rating factor formula.

(d) If the unobligated balance of HBRRP funds for the State is less than $10 million, the HBRRP modifier is 1.0. This will limit the effect of the modifier on those States with small apportionments or those who may be accumulating funds to finance a major bridge.

§ 650.709 Special considerations.

(a) The selection process for new discretionary bridge projects will be based upon the rating factor priority ranking. However, although not specifically included in the rating factor formula, special consideration will be given to bridges that are closed to all traffic or that have a load restriction of less than 10 tons. Consideration will also be given to bridges with other unique situations, and to bridge candidates in States which have not previously been allocated discretionary bridge funds.

(b) The need to administer the program from a balanced national perspective requires that the special cases set forth in paragraph (a) of this section and other unique situations be considered in the discretionary bridge candidate evaluation process.

(c) Priority consideration will be given to the continuation and completion of bridge projects previously begun with discretionary bridge funds.

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